The Iron Ag

A Review of the Hardware, Iron and Metal Trades.

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The almost innumerable variety of purpose requiring the raising of water and other liquids in large quantities and in many situations render the consideration of the point of economy of great importance. Even though it involve a large increase of complication and cost of construction, the form of apparatus which, by a wise adaptation of natural laws and me chanical principles, will elevate the largest quantity of water per pound of fuel for a given time and hight is, beyond cavil, the best. This of course applies only to those devices whose percentage of saving is sufficient to pay within Follansbee started a 3 inch pump, a reasonable time for an increased cost of construction, attendance, &c., as otherwise the saving would be only on one side of the account, and, like Franklin, we would "pay too dear for our whistle." But when a device, although carried to the extreme limit of slmplicity and cheapness, is capable of performing a required duty with a material saving of cost, both as to power and attention, it possesses a double recommendation to favor, and its merits must ev ntually become known and appreclated. One of the most meritorious of the many excellent apparatus of the class under by a centrifugal dryer, wetting many excellent apparatus of the class under consideration, which comprised an important and interesting feature of the display in Hydraulic Annex to Machinery Hall at the Cen- ley, and the propeiler again started, tennial, was the above mentioned " Follansbee ' pump, an illustration of which is herewith presented. One of the great difficulties heretofore experienced in vertical propeller pumps has been the tendency of the column of water to follow the rapid rotery motion of the propellers, thereby partially neutralizing their lift- inch belts), the stream was reing properties. This is overcome in a measure by the high rate of speed at which the propellers are revolved, but it involves two very the flow of water over which was serious evils, in that the increased velocity 2 inches, making a volume of 40 necessarily requires a proportionate increase of power, and also that as the rotation of the being what was due to gravity water is not stopped nor even decreased, the lift is simply in a ratio due to the difference between the velocity of the water and that of the pump will readily allow of the the propellers; and the unavoidable result is that the centrifugal force by throwing the water from the center leaves the latter hollow, thus producing a somewhat meager stream, when the actual square inches of section are considered. This, however, is not in comparison with other pumps, for there the propeller takes a high rank, but to demonstrate instantly falls to the level of the the great loss from the rotary motion of the water, which is the one fundamental defect to feetly free and preventing damage which may be traced all others which are peculiar to devices using the propeller principle. Mr. Follansbee's great desideratum in and diploma at the Centennial. It designing his pump was the prevention of any is manufactured by the Lewiston save an approximately vertical motion of the Machine Company, of Lewiston, column, and the result shows not only that he Me. The regular sizes manufacaccomplished his object in the most admirable tured are from 4 inch, having manner, but also that his theory of the effect was not over-estimated. As will be presently to 24 inch, of 25,000,000 gallons in demonstrated, the success of this pump is dependent solely upon this feature, to which are to prices, &c., will be furnished due the great saving of power through a upon application to Messrs. Kilvert reduced rate of speed, and the solid volume of & Tappan, general agents, corner water delivered, whose area of section is ac- Water and Congress streets, Bostually that of the discharge opening, and not ton, Mass. minus a large percentage of hollow center. As the water is raised by the direct mechanical action of the screws, and is not dependent upon atmospheric pressure the lift of which the pump is capable is not limited. It is therefore made in short sections, and as many as necessary joined together to suit the required application. As regards simplicity and cheapness it may be stated that the greater part of tion, Sweden will soon be exceedthe work required is done in the foundry-very ingly well provided with railways, little machine work being necessary. A reference to the cut will render so obvious the con- higher degree, her iron producstruction and operation of the pump, that any tion, in respect to quantity, could but the briefest explanation will be unnecessary. The easing or barrel of the portion con- ance in comparison with that of taining the propellers is made in half sections, flanged on the ends and sides for the joint unless some considerable beds of bolts. Along the inner edge of the flange is a ironstone, bitherto unknown, are groove for the reception of Tuck's or any discovered in the neighborhood of similar round packing, upon which the joints the Scanian coal field, for only on are effectually and rapidly made. At the cen- this supposition can it be thought ter of the length of section on the concave side is a bearing for the shaft on that side, iron cheap enough to meet with an leaving just sufficient space for the propeller almost unlimited demand. In the upon the other. By means of an efficient absence of any such discovery teracted by the left. To show this point clear-ought indeed to be better managed, and the l tention is paid.

The "Follansbee" Double Propeller the exhibit had a hole drilled near the floor is the case now; for of the more remote tracts the supplies of charcoal are insufficient, would be successfully used where all other resources. (about 6 feet from the surface of the water), of forest it may, unfortunately, in general be be to smelt them with English coke, and afterand upon removing the plug the solid current said that the people there have up to this ward to refine by the Bessemer process the pig from trepan or borer, weighing 15 tous, and havcould be seen rushing upward, with not sufficlent centrifugal force to throw a drop through renewed growth of the wood; but even if this manufactured would not, indeed, be of so good feet, and armed with sharp steel teeth. This the opening. By holding the finger in the cur- were properly attended to, it is yet an im- quality as if made from the same ores with is worked by a balance beam up and down, rent its direction could be distinctly feit. The possibility to attain to any iron production on charcoal, but, notwithstanding, it ought to be being turned in each descent until it bores a elevation and size of the stream thrown by this a great scale by means of charcoal. For every always good enough for rails and tires, &c. A round hole of six feet in diameter and 10 yards pump, when compared with the size of the belts | tunnland of forest in the parts of our mining | new iron work, Oscarschutt, which is intended | in depth. Another trepan, weighing 25 tons or cal men. In order to show the effect of the solid wood yearly, while a tunnland of forest opposite motion of the propellers in prevent- as commonly managed by the Swedish peasan- lately by a German company at Morgongofva, to not less than 12 or 18 feet in diameter. The

ing the rotation of the water, Mr. which, although driven by a 1 and 11/4 inch belt, threw a perfectly solid stream through a 3 inch nozzle, which fell without the least sign of twist to the current back luto the tank. One of the belts was then thrown off the pulley and the propeller stopped. The effect was instantaneous-the volume of water decreased to less than one-third, and left the nozzle with everything in its vicinity. The belt was then replaced on the pulwhen the stream almost instantly resumed its former solidity and volume. To show the quantity of water raised, as compared with the power used (as before stated, the machine was driven by two 11/2 ceived by a small tank, having an overflow or wear 20 inches wide. square inches section, the velocity only. As there are no valves nor other parts to become obstructed, passage of foreign substances which are not too large to pass the propellers; therefore it is well adapted to raising such liquids or semi-liquids as paper pulp, tan bark, sand, &c., &c. Upon stopping the propellers the water surface, leaving the pump percapacity of over 500,000 gallons,

Swedish Iron.

In a recent article on Swedish iron, Prof. Ackerman, of Stockholm, says:

In proportion to the populabut if this were the case in a vet scarcely become of any importseveral other countries; at least, possible to produce in Sweden

coupling the shaft may be made of any re- in Skone, on the contrary, there can never, on try, very often, not to say commonly, if the very frequently used in tempering, the articles quired length, and, as the only finish necessary account of the expense, be any question of prois for the journals, the expense and time neces- ducing in this country what is called in the sary for the addition of one or more sections market of the world "ordinary" iron, but per hectare) solid wood yearly, and from a ume and color of the smoke which rises from is inconsiderable. The attachment shown at Sweden must continue to confine herself to the the bottom does not contain valves, but is manufacture of the so-called "quality" iron. trance of anything which is too large to pass that a relatively unlimited demand could be the propellers. The shafts are driven by means found for such dearer iron, an iron production posite directions, which, in connection with an so much the less attain to any large amount the peculiar form of the casing, is the whole according to present ideas, as the growth of the water. Of course it is understood that the of the country, is much slower than in many of one centuer pig iron, a quarter of a tunnland propellers on one shaft are right and on the other countries. In proportion as forest prod- (2.8 hectares per ton of pig iron) of wood, even

not yet been put in work.

Tempering Spring and Tool Steel.

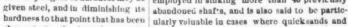
If steel is heated to redness and when so heated it is suddenly cool-With the explanation that seems almost unnecessary, that in tempering the steel is made very hard, and then its hardness reduced by heating it to a certain point indicated by the color of the steel, or, if heated in oil, by the color of the smoke or by flame, we give some rules to be observed in tempering. 1st. The steel should be very bard before tempering. If the articles and labor lost to temper them. 2d. provided it does not get greasy. The temperature to which the steel should be raised for various pur poses is shown by the color of the steel when heated. Lancets edge, are tempered to the faint yellow tinge, equal to 430° F., while razors and surgical knives, which must be less easily broken, are tempered to the straw yellow, equal to 450° F. Pen knives are tempered upon an iron plate over the acquired the full yellow color, equal to 470° F. Cold chisels and stand rougher usage, and are thereequal to 490° F., while the brown F., marks the tempering heat for axes and plane irons. Table knives color, equal to 530° F., in order to let them down to the proper temper, and articles in which great elasticity is required, such as swords and watch springs, are tempered to a bright blue, equal to 550° F., while saws are brought to the highest tempering heat at which the dark blue colorshows itself. This temperature, about 600° F., is that at which oil boils

and inflames, so that a bath of oil is wood is not to be deteriorated, does not yield being immersed in it and the temperature ascermore than about 20 cubic feet (1 cubic meter tained either by a thermometer or by the volcoated with tallow heated over a flame till the cold tallow. Large steel implements are let

> Improvement in Mining Machinery .very efficient, as compared with other usual sible with the beliews.

have failed. The device consists of a wrought by which it was driven, seemed almost incredible, and attracted much attention from practi52 cubic feet (2.75 cubic meters per hectare)

for the manufacture of pig iron with English more, is then attached to the rod and worked coke, and for the direct production from the in the same way until the cylindrical excavation pig of Bessemer metal, has also been erected is prolonged to the same depth and increased but owing to the bad times it has dirt is hauled out of the mine by an iron bucket with a valve bottom, which goes down open and closes when drawn back, while the iron tubing is let down in circular sections, so attached to a false bottom that they float in the water-which always fills a shaft, and with this machine rather assists than retards the workuntil, by a simple arrangement the tubing is allowed to cool slowly, it becomes gradually let into its place. Numberless grapnearly as soft as pig fron, and can pling irons, which are only used in case of acbe as readily worked. If, however, cidents, accompany the shaft borer, and noth ing which can occur to interfere with a successed, as by plunging it into water it ful working of the apperatus is lost sight of. becomes very hard and brittle. Indeed, so effective is the operation of this new Between these two extremities al- apparatus found to be, that it has already been most any degree of hardness may be employed in sinking more than 40 previously shown to be the best for certain water prove by the ordinary methods unuses consists the art of tempering. manageable, the borer needing no assistance below the earth's surface until the shaft is com

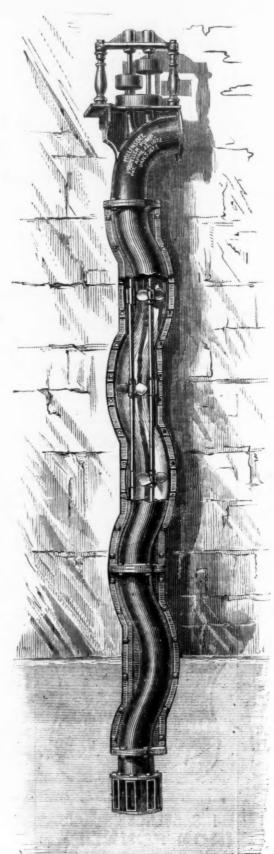


An Improvement in Bessemer Converting Vessels.

An invention which promises to be of importance in relation to the pottoms of the converters used in the Bessemer process for the conversion of cast iron into malleable iron and steel, has been patented by Mr. John Collins, to be tempered are not properly of Bolton, England. It has for its object the hardened at first it will be time constructing of the bottom in such a manner as to render the wear and tear in use more uni-The heat for tempering should form, to reduce the cost, and prolong the "life" not be too suddenly applied. The of the "bottom," while saving the time exslower the heating the tougher pended in frequent renewals. In order to effect and stronger the steel. 3d. The these objects he dispenses with the use of premost careful and experienced viously prepared fire-clay tuyeres, and forms a workman is hable to be deceived homogeneous bottom with the tuyeres in one in the color of the steel, and therewith, and he employs a more highly and consequently in the temperature uniformly refractory mixture as a material, in an imperfect light or at twilight. and further adopts an improved method of pre-4th. Where water is used for paring the bottom. In carrying out the inven-plunging the steel in, the less frequently it is changed the better, example, as that used in the manufacture of the best silica bricks, and grind it to a uniform coarseness adapted for the purpose. This rock, which is known as a milistone grit or gannister, should contain not less than, say, 92 per cent. of silica. He prefers the "lychreda" rock for which must be very hard in order the purpose. To this ground rock he adds by that they may be ground to a keen preference, say, from 3 to 12 per cent. of well selected and washed fire-clay.

A special arrangement is made for molding the bottom. He prepares a molding box corresponding in internal size and shape to the bottom, and capable of resisting a pressure of say, at least 2 tons to the square inch, without fracture. This box is provided with a loose fire, the blades being laid upon it on their backs until they have bottom plate, and he prepares a top plate to fit inside the box, which latter plate is furnished with taper studs of the diameter and number required by the special circumstances of the large shears for cutting iron must | blowing to be effected by the vessel--that is to say, corresponding to the tuyere fore tempered to a brown yellow, produced. The stude are made of a toper sufficient to clear well, and are also formed with a with purple spots, equa to 510° slight twist or spiral in their length. The length is such as to pass through the bottom in the direction of its thickness, and to leave a are heated till they acquire a purple | margin. He then fills the box so prepared with the mixture or material above described, and fits on the lid, and subjects the whole to the action of a powerful hydraulic press (applying a pressure of, say, not less than 2 tons to the square inch), and immediately imparts a slight turn to the stude by suitable mechanical means, while the mixture is under the said pressure. He then removes the pressure, withdraws the studs and the box, and subsequently stoves the bottom for a period of, say, not less than 48 hours, after which the bottom is ready for

> Blowers.-Improved blowers have within a few years been adopted in many smithshops, and the leather bellows-which was once so characteristic a feature of the wagon and horseshoers' shops-is rapidly becoming a thing of the past. The modern blowers are operated by hand, foot, or very frequently by steampower, and the principal advantages which they possess over the old bellows are : First, great economy of room; second, durability; third, the production of a force blast that can be varied according to the requirements of the work in hand: fourth, saving in fuel, owing to more perfect combustion; and, fifth, great saving in time, as the operator has more perfect control



THE "POLLANSBEE" DOUBLE PROPELLER PUMP

measure of solid wood there is obtained, ac- the oil. Some tools are annealed by plunging cording to the way in which the carbonizing is them into oil heated to 400° F., and allowing merely a grating or strainer to prevent the en. But even if circumstances were so favorable managed, 100-90, but frequently only 70-60 them to cool down in it. Small steel tools, per cent. charcoal by volume. If the quantity after being hardened by chilling in water, are of charcoal requisite for the production of a of the pulleys shown at the top, and run in op- grounded exclusively on forest products as fuel centner of pig iron, the offal, &c., being in- tallow begins to smoke, and then stuck into cluded, is estimated at two barrels (7.8 cubic meters per ton), there would thus be required down to the proper temper by being heated in secret of successfully preventing rotation of wood here, especially in the more northern parts to yield the fuel necessary for the production a kind of oven known as a muffle. other, left hand, and the tendency to rotation ucts, in consequence of increased facilities of if managed as well as is the case only with An apparatus, invented in Belgium, for sinking over the fire, which can be rekinded and the caused by the right would be effectually coun- transport, become more valuable, the forests those forest properties to which the greatest at- and tubing mining shafts, is said to have proved heats taken in a much shorter time than is pos

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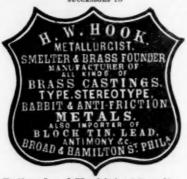
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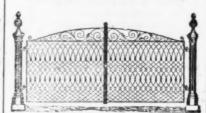
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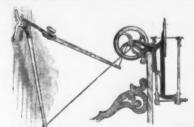
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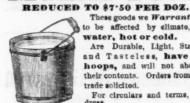
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In offering this machine to the public, we would state that no fear need be entertained as to its durability, great care having been taken in the manufacture. The wood need is of the best quality of matched pine, and made in such manner as to prevent any dust from escaping when the Sieve is being worked. The cog-wheel Ash-Sifter should be used by all having the care of Boilers, Furnaces, &c., and are likely to suppliant all others. We claim it will do the work of any five machines now in use. It is always ready; can be worked backward and forward. Ashes to be sifted are placed in the Hopper on top of the Sieve, which we will designate as A. The weight of it causes opens a tray door under the Hopper and enters the Sieve, which is suspended on an angle by double-jointed hooks. X K is a large cog-wheel fastened on the side of Fifter, and connects with one one-fourth its size, which is secured on a crank shaft, and connects an arm with the Sieve. B. Ash-box door; C. Ash-box; D. partition that separates the coal from the ashes; k, the coal-bin door; G, coal-bin. L is the opening where the coal sides into the bin while being aifted, F, door on top to take out clinkers, &c. With our revolution of the cog-wheel K, we get from ten to four ten motions of the Sieve. We make three sizes: No. 1, three and a haif feet long, three tent in the side of pirity-three inches high, and two feet wide, price, \$35; No. 2, four feet long thrity-three inches high, and two feet wide, price, \$35. price, \$30; No. 3, four and a half feet long, three feet high, and two feet wide, hopper to hold one-half barrel, sif ing it in less than one minute, price, \$35

References can be had upon application to parties now using the sifter. All Sieves warranted to give satisfaction.

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A Monument to Grit.

The grindstone trophy, of which we present Centennial Exhibition. It was exhibited by which they can obtain work. Mr. J. E. Mitchel, of Philadelphia, and was composed wholly of grindstones, such as are used in workshops and factories. The column was 26 feet high, and consisted of 36 stones of different grit. Grouped about it were various our recent article on "Comfortable Workstyles of grindstones, weighing from 1000 to shops" with one on workshop surroundings, was 26 feet high, and consisted of 36 stones of different grit. Grouped about it were various 4000 lbs., used for grinding saws, file blanks, edge tools, table cutiery; also bead stones for nail works and locomotive shops. The trophy was unique and not without beauty. Mr. Mitchel is an authority on the subject of grin 1stones and their use, and has given us the best will remember.

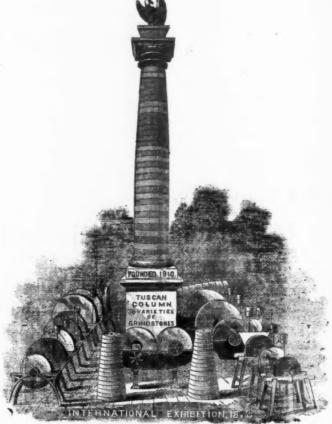
For many years up to a recent date the city the country. Gradually this important manu- our workshops, and were it not for the daily

in the different shops as speedily as possible Employes desiring to continue with us will give their names to the respective foremen, from in illustration, was one of the novelties of the whom they can learn prices and terms upon

Workshop Surroundings.

from which we quote as follows A little disposition on the part of owners, in respect to the comfort of those who look to them for employment, will create a tie of interest that will be reciprocal, and each will feel that the other is necessary for his support, and literature which the subject has, as our readers that they cannot well succeed if separated. As a rule, employers pay too little attention to cheerful surroundings for their employes, in Reduction of Molders' Wages at Troy. any branch of business. There are exceptions, of course, and it is well to note that where these The Troy (N. Y.) Times, of the 21st ultimo, exceptions occur a more prosperous general appearance is manifest.

There are but few workshops that may be of Troy, if not the leading stove manufacturing said to be attractive in their surroundings. city in the country, was one of the first, and The majority of them are dark, crowded, hundreds of men were afforded employment dreary places, where a stated stint of labor is and gained a livelihood for themselves and their performed according to a pre-arranged agreefamilies in that branch of industry. The ment, for which a stipulated price is paid. Bemolders' union of this city was the largest in youd this there is but little in the majority of



A GRINDSTONE TROPHY.

of dollars invested in the stove business in this workman, no matter how good he may be. city. It will not do to sacrifice this property and lose the benefits it secured to us as a comnot be left to want norshould the men women conducting the business here are as good as finence thus created. any in the land. Mutual concession, forebearin solving the difficulties of the situation and and why it is kept so severely unattractive is a all concerned.

manufacturers in this city. The firm is also one live to others and himself also? of the oldest and most extensive in their operations in the country. It has been a very sucous to its employes. The following notice, posted in their shops yesterday, serves to show the difficulties that Messrs. Fuller, Warren & Co. have had to encounter, and the means by their example:

facture has been deteriorating here. Stove call of want there would be no incentive to lafoundries have been erected in the West, and bor. We have seen workshops that were dark a large section of country which was formerly and damp, destroying the health and buoyancy supplied by Troy manufacturers now looks to of the spirita of the operatives, when a small localities nearer home for the productions of sum, perhaps, would add not only warmth and this industry. It is said, with how much truth light, but fill the place with pleasant surroundwe cannot vouch, that during the past few years ings. The surroundings of the place of labor it has cost more to manufacture stoves in Troy have more influence upon the operative than than in any other city in the Union-that labor many are aware of. Give a mechanic clumsy is higher here, and that, consequently, this extra tools to work with, a rough durty bench to burden has given the competing manufac- work upon, imperfect light, scarcely elbew turers of other cities great advantage over our room, and but little care exercised if he have own in the sale of goods. The cause of the de- proper ventilation and warmth, and he will he pression in the stove trade of Troy may be a come careless, his work partaking of the surmatter of dispute; but the fact of the exist-roundings in which he is placed. He will ence of such depression remains, nevertheless, think more of getting his wages at a certain and must be faced, and if possible, overcome. time than the completion of his work. A few There are a great many hundreds of thousands | years of this experience will spoil almost any

But give him, on the contrary, good tools to work with and a nice place in which to perform munity in promoting the general welfare. his labor, and he will insensibly take more There are also hundreds of mouths to be fed pains with it than in a bad and ill arranged apby the proceeds of labor in this department of partment. In a pleasant room, he will, of his trade and human activity. These mouths must own accord, keep his tools and work in order, and more cheerfully perform the task assign. and children they represent be driven from the him. A kind of magnetic influence of the surcity. There are ways by which the stove roundings will infuse itself into the operative, trade of Troy can be retained, and the old and his work will partake of that nature and go prosperity brought back. The facilities for from him stamped with the impress of the in-

There is no reason wby the place of business ance, and the adoption of common sense views should not be surrounded with pleasant influin the contest between capital and labor (to use ence as well as the home. Most of a man's a much abused term) will have a happy effect active life is passed in his place of business, restoring a reasonable degree of prosperity to mystery to many. The shop is certainly the mine from which he draws his wealth, and Fuller, Warren & Co. are the largest stove | might he not spare a small sum to make it attrac-

This curelessness on the part of employers is by no means confined to them in workshops ceasful concern, and always, we believe, gener. alone. It is apparent in almost every branch of industry. The workmen are too often looked upon as mere machines, who require no other incentive to labor than wages promptly paid. Wages are, of course, the prime incentive to which they hope to overcome them. We un. labor, but other things must be taken into conderstand that other manufacturers will follow sideration when good work is expected. There must be harmony between employer and em-"These works will be closed on Saturday ployed, or the employer does not get as much night, November 25, 1876. In consequence of for his money as he otherwise would. Looking the great competition in the manufacture of at it from a mere financial standpoint, it would stoves and heaters which meets us at every point, be infinitely better for employers to pay more and will inevitably destroy our business unless attention to the comfort of employes than is we can produce our wares more cheaply, we usually the case. It makes the greatest differhave concluded to make a general reduction of wages, including all foremen, journeymen, apprentices and laborers in our employ. On and after December 4, 1876, work will be resumed Fron.

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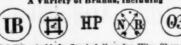
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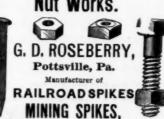
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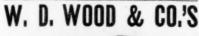
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North Carolina Handle (WILSON & SHOBER, Proprietors.)

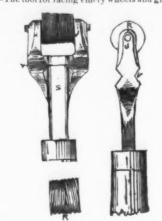
of SPOKES, 4XP, PIOK, SLEDGE, HAMBER, HATOREZ and other

Improvements in Miners' Lamps

Messrs. Lee Brothers, of Plymouth, Pa., have ecently introduced an improvement in miners lamps, which, although very simple, makes the lamp very much more durable. The ordinary lamp cover consists of three pieces, the upper one forming the top, an under one which is struck up so as to form a plug, the flange of which is folded under the edge of the top, and lastly another piece soldered on which forms the hinge. The flame from the spout of the lamp not unfrequently unsolders the hinges and, of course, the cover is lost. The improvement of Messrs. Lee Brothers consists in making the whole top of a single piece of metal. The top and bottom pieces when cut out are left connected by a strip of metal which forms the hinge. The bottom is thus struck up and its edge folded under the edge of the top piece. The whole cover of the lamp is thus made secure against unsoldering. As a piece of stamping these covers are good examples of very neat work. The whole lamp is very neatly and carefully made, care being taken that all parts are oil tight.

New Cattle Tie.

TOOLS FOR FACING EMERY WHEELS. To T. A. Richards, Brooklyn, N. Y .- Oct. 17 .- The tool for facing emery wheels and grind-



TOOL HOLDER.

hooks and the letters and character 'T. & Q.

The following design was patented during the week ending Oct. 24:

9603.-Spoon and Fork Handle.-George Wilkinson, Providence, R. I., assignor to Gor-ham Manufacturing Company, same place. Term of patent 7 years.

English and American Railways.-In an interview Mr. John Walter, M. P., proprietor of the London Times, spoke as follows of American railway practice: He had traveled extensively since his arrival in this country, visiting Boston, Albany, Chicago, Cincinnati, Washington, Philadelphia, and many others of the principal cities. He did not feel himself com-petent to judge of the comfort of ordinary American railway traveling. He had ridden so luxuriously in the special Pullman car which had been placed at his disposal that he was unable to form any idea of the way in which other people traveled. "The palace car," he stones shown, consisting of the handle H, to ride in! In fact, it is much handsomer than provided with the jaws J J, and the cutters the one she uses." The liberality with which railroad directors carried him to and fro over the land was a cause of great astonishment to To Alfred J. New, R. A. Matthews and William
The accompanying cuts illustrate Sargent & Henry Berry, Nottingham, England.—Oct. 24.— known in England. The Queen herself was Co.'s new cattle tie, No. 5. This tie is made of 1. The tool holder consisting of the stock A, obliged to pay immense sums every year for



eye. The smaller cut illustrates the manner of clamp F and the swivel bolt G, with nut b. packed two dozen in a box. The price, with- scribed.

Sargent's patent snap and a new double ring or | the head B, mortised or slotted, as shown, the | railway conveyance, and no railway company fastening the rope to the irons. It can be ad- 2. The combination of the head B, mor

justed to any size by simply slipping the rope tised or slotted, substantially as shown, the through the ring and tying in an ordinary knot. clamp F, constructed as specified, and the It is made of malleable iron, neatly Japanned, roughened wedge D and tool C, formed as de-

out rope, is \$1.50 per dozen, discount 60 per cent. and 10 per cent. for prompt cash.

New Patents.

We take the following abstract of new patents, recently issued, from the official

METALLIC PLATE COMPOUNDED OF IRON AND STEEL.

To Charles P. Haughian, Brooklyn, N. Y .-Oct. 10.—The combination of the internal body



of steel A and a protecting casing consisting of alternate layers B C D, of iron and steel. CUTTING AND FACING EMERY WHEELS.

To T. A. Richards, Brooklyn, N. Y .- Oct 17.-1. The improvement in the art of cutting



emery wheels, grindstones, granite, sandstone marble, slate and other like material, natural

and artificial, by screw thread cutters. 2. The improvement in the art of cutting emery wheels, grindstones, marble, slate and other like material, natural and artificial, by screw thread cutters made to cross-cut, as by right and left-hand screw thread cutters passing alternately over the same surface.

3. A roller cutter for facing stone, provided with screw thread cutting surface on its cir-

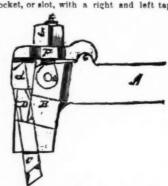
4. A roller cutter for facing stone, provided with a right-hand screw thread cutting surface, in combination with a roller cutter pro vided with a left-hand screw thread cutting surface.

5. A cutter for operating upon the surface of stone or other like material, provided with rollers, the cutting devices of which are located diagonally to each other, and so fixed as to compel the path of the cuts of one diagonal to cross those of the other diagonal in the same course, and by repetition plane the sur-

6. The improvement in the art of cutting stone and other like substances by roller cutters, the cutting devices of which are located diagonally to each other, and so as to cross-cut, course, and by repetition plane the entire sur-

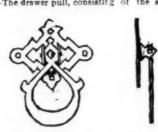
3. In a tool holder, the clamp F, pivoted or fulcrumed, as shown at c, and provided with a jaw d, in combination with the swivel bolt G

4. The combination of the head B, having a socket, or slot, with a right and left taper,



a tool C, with parallel sides, and a wedge D, having its opposite sides tapered precisely as the walls of the socket, all for the purpose of adjusting the tool either to the right or

DRAWER PULL. To W. N. Weeden, Waterbury, Conn ,- Oct. 17.-The drawer pull, consisting of the skele-



ton sheet metal base, with the ears or cut out portion turned up therefrom, combined with a swinging handle hinged to the said

DRAWER PULL.

To W. N. Weeden, Waterbury, Conn .- Oct. 17.-The drawer pull, consisting of a skeleton sheet metal base, with one or more parts cut from the base, slotted and turned outward,



combined with a sheet metal handle, construct ed with a shield, or boss, and tongue project ing therefrom, the said tongue bent to form the hinge connection.

The following trade-mark was duly registered during the week ending Oct. 10: one over the path of the other in the same 4050,-Cutlery,-Theile & Quack, Elberfeld,

Germany. "A representation of the device of two fish- in Prussia.

in all England would think of offering a coach for the free use of any gentleman, public or private. The American car, in Mr. Walter's estimation, was far superior to the English carriage. The possibility of being shut in with thieves or madmen (it had fallen to his own lot to be shut in with a madman); the close, cramped quarters which in their very nature stiffled all the comfort out of the unhappy traveler; the partitioning a man from the sight and society of his fellow creatures; and above all the shortness of the carriages, which caused them to sway and jerk about so violently that conversation became a torture and reading an impossibility. All these things combined to render a journey in an English railway carriage a matter of something worse than unpleasantness. The permanent way or roadbed of the English railroad was much more substantial than that of the American, but the English carriages could not be compared with the American

Ingenious Electrical Apparatus .- In the apartment of the new and magnificent scientific structure erected in Oxford, England, allotted to experiments in electricity of high tension. an apparatus of remarkable ingenuity has been provided for keeping the air of the room dry. This apparatus consists of a heated copper roller, over which passes an endless band of flannel; the roller is heated by means of gas lights within it, which, being constantly burning, cause every part of the flannel to become hot. The vapor which arises from the heated flannel is carried off by the current of air which supplies the burners inside the roller. The flannel, when thus dried and cooled, passes into the open air of the room where it again absorbs moisture, and thus the air of the room, becomes so dry that the electrical instruments are preserved in a highly insulated condition, thus admirably meeting all the requirements of the case. Nor is this all. The electricity passes from the electrical machine to the table in the lecture room by insulated wires connected with the prime conductor of the machine. The nghest room in the building occupies the upper portion of the tower, its floor being more than 50 feet above the ground; and in this room is placed a Bunsen water pump, the water from which has thus a vertical fall of considerably more than fifty feet. This pump is used for xhausting a large receiver, from which pines communicate with different rooms, so when it is desired to exhaust the air from any vessel it is only necessary to connect it with one of these pipes, and turn on a vacuum. For a more perfect exhaustion the Spengel or other air-pump is necessary. On the top of the tower referred to is fixed a wooden mast, carrying a pointed metal rod, for the purpose of collecting atmospheric electricity.

Krupp, the well known fronmaster of Prussia, has lately patented a mode of manufacturing car wheels. A skelp is first formed of a long flat plate of iron, with a central rib above and corresponding groove beneath, and wide at each end. One end is secured to a rotating mandrel and is coiled on itself, forming the bub; the coiling being continued, the narrow portion of the skelp is wound on itself, forming the web; the coiling of the outer wider end forms the rim. The blank thus formed is placed in the furnace, heated to a welding heat, and weided under pressure into a homogeneous mass of the proper shape, forming the com-pleted wheel. We think the American method of casting wheels with chilled tread altogether better, simpler, cheaper and more satisfactory in its results.

Specimens of paper and cardboard made from peat were recently presented to the Berlin Polytechnic Association by Herr Veyt-Meyer. The cardboard was so thick that it could be plaued and polished. Paper made of peat alone is like that made from wood or straw, but only 15 per cent. of rags is needed to give it consistence. A large factory for the manufacture of peat paper is to be established in Prussia.

Fron.

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This Laboratory was established in 1866, at the instance of a number of practical Iron-masters, expressly to afford prompt and reliable information upon the chemical composition of the substances above mentioned, for smelting and refining ourposes. The object being to make it at once a convenient, practically useful, and comparatively inexpensive a limact to the Furnace, Forge and Rolling

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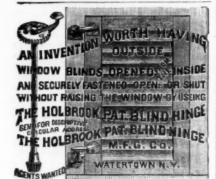
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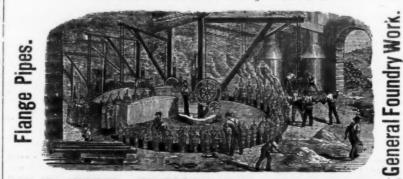
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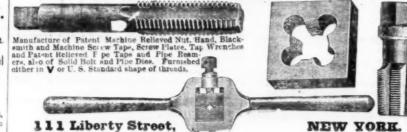
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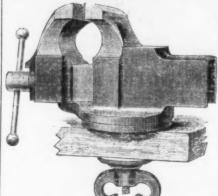
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Solid Box Vises, Hammers, Sledges, Picks, Mattocks, Grub Hoes, &c.

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CA UTION.—The public are notified that in my suit against Imhæuser & Co., of New York, a decree rooms and in my favor, June 10, 1874.

Proceedings have been commenced seniors, and Imhæuser & Co., for selling clocks continued that

one of the Court, and especially the clock with a series of springs in the cover, and marked "Patented".

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We would call your attention to our New Pattern Bight Handed Patent Burrall Corn Sheller, which we are now ready to place on the market. The Hopper is on the left side of the machine, as your face the crank, and can therefore be operated by the right and fed by the left hand, so that one man can both feed and work the Sheller. The wheels, boxes, &c., are the same as in our other Sheller, the only difference being in the sides, with which exception the repairs for one will fit the other. We manufacture the only genuine Burrall Sheller, and would warn the trade to look out for spurious machines. It will shell any size corn by regularing the spring in the Hopper.

Get only the Burrall Sheller with our name on and

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through the waste water pipe. The same amount of water which is used in R. BUSH. 194 19th St., South Brooklyn, N. Y.

On the Open Spray Tayere and Other in exceptional cases that it is found desirable ings showing a perfectly bright and clear fire to use more water than would be required by After a time the furnace manager be

The practice of blast furnace engineers and managers, as to the dimensions and shape of the tuyeres they adopt, varies greatly in different districts; but until recently all the tuyeres in use, since the introduction of hot-blast first necessitated a water tuyere, may be classed under two heads, namely, the coiled tuyere and supply. the water jacketed tuyere. Various tuyeres on both systems will be briefly noticed; but the principal object of this paper is to describe the open-spray tuyere, invented by the writer, for which important advantages over either of the

systems previously in use are claimed. The coiled tuyere is generally made of a coil a hollow cone of cast iron. Sometimes the coils are wound close at the nose of the tuyere, in order more effectually to prevent the cast iron from burning; and sometimes the tuyere itself is formed entirely of a coil of tube, closely wound from end to end.

The water facketed tuyere is generally made of wrought iron, and consists of two conical tubes of different diameter, connected at each end by rings of wrought iron welded in, so walls of the tuyere, which is filled with water second pipe in the upper side.

Tuyeres of this description were illustrated by figures showing the ordinary wrought iron of Mechanical Engineers in the year 1865 by Mr. Solly, who first introduced these tuyeres.

A water jacketed tuyere, of a kind which is very much used on the Continent, is made of wrought copper, the inner two being brazed in, and a wrought iron ring either brazed or riveted in at the rear end.

The phosphor bronze tuyeres are generally fixed in a east iron easing or box, beyond which they project into the furnace for the greater part of their length, and they are so arranged that they can be turned round in the cast iron plate or box in order to expose a different side of the tuyere to the action of the materials in the furnace. Greater durability is claimed for phosphor bronze than for gun metal or copper, but each metal possesses the same advantage of preventing adherence of slag, scoria or iron to the nozzle of the tuyere, which is the only object to be gained by the use of copper or its alloys in preference to iron. Additional precautions as to water supply have to be taken where such metal is used, as, owing to the low temperature at which it melts, a tuyere may be more rapidly destroyed than an iron tuyere where any overheating is possible; but under favorable conditions both gun metal, copper and phosphor bronze tuyeres have been found very durable, and the advantage gained by keeping the blast nozzle always clean and fully open is an important one.

A modification of the wrought iron water jacketed tuyere was introduced by Mr. Hodgette, in which the supply pipe was made to deliver its water round the nose of the tuyere through a series of perforations, and the return water was made to flow round the tuyere casing by a fillet placed in the inner tube. This tuyere, like the ordinary water jacketed tuyere, is close at the back and is kept full of water.

The open spray tuyere, invented by the writer of this paper, consists of two concentric conical tubes, closed at the nozzle but open at the rear end. The water supply is connected in the usual menner with a flexible hose, and various systems of spray pipes are used to suit various shapes of tuyeres and various conditions of water supply. Wrought iron tuyeres on this system, an open spray tuyere of malleable cast iron, a small gun metal open spray tuyere, and the open spray tuyere of standard dimensions, showing also a complete section of the tuyere, were also illustrated by drawings and speci-

The form of spray pipe consists of three wrought iron tubes, slightly flattened toward suit the shape of the tuyere These three tubes are joined by a wrought iron filling piece, which is connected by a fourth tube with the water escape of water into the furnace. The spray pipes are made either of wrought iron, brass, or copper, and a sufficient amount of water is allowed to escape through small holes or slits in the spray pipes to protect every part of the tuyere casing which is exposed to the heat of the furnace. The spray pipe may have the two side pipes bent back and plugged at the ends with wooden plugs, which may be removed occasionally if it is thought desirable to clear the spray pipe from any sediment. The spray or jet of water from each hole in the spray pipe spreads over a considerable surface, and a small number of holes is, if they are properly placed, sufficient to keep the whole interior surface of the tuyere casing constantly wet. Scarcely any steam is visible, and the waste water passes away, after cooling Hopper.

Get only the Burrall Sheller with our name on, and the tuyere, at a temperature little exceeding avoid trouble in getting repairs.

that at which it entered, unless a large portion of the tuyere is exposed to violent heat, in which case the temperature of the waste water is certainly no greater than it would be from a tuyere of the old system placed under the same conditions. The spray is principally directed to the nose end of the tuyere and beats back to some extent on the top and sides, which are also protected by a sufficient number of additional sprays from holes drilled in the spray The water falls round the sides and end of the tuyere and escapes from the back

water jacketed or coiled tuyeres is found amply sufficient to protect spray tuyeres, and it is only

other tuyeres.

In cases where tuyeres on the old system are durable, these are found to be equally so under most weeks, these tuyeres have, in many inmany months.

The durability, however, of these tuyeres ment or choking of the water supply will cause accidents which will be referred to. It is under forming a space between the two concentric such unfavorable circumstances that the adwards of the tuyere, which is filled with water vantages of these tuyeres are most apparent. would have occurred if a colled tuyere had been supplied under pressure, and generally brought If a small hole be made in the side or end of in use instead of a water jacketed tuyere in through a feed pipe at or near the bottom of the tuyere, either from "drilling" or stoppage the tuyere, and allowed to escape through a of water supply, or any other cause, it is still causing considerable damage to property. impossible for water to escape into the furnace. saved by shaking or adjusting the spray pipe; tuyere, the gun metal tuyere, on the use of but even if the end of the tuyere is entirely tuyeres. which a paper was read before the Institution burnt it is still impossible for water to flow into the furnace, as the blast will at once escape through an aperture, be it small or large, and, open end of the tuyere easing. If the hole is small and the damage is detected in time, the is supplied to it, is kept in equilibrium; but the adjustment of the spray pipe will often cause it no necessity for haste in removing the tuyere, as the escape of blast through the aperture well, and to give warning when a very slight drives back the spray and prevents the possibility of any harm or danger, such as would ever, even if promptly acted upon, would not furnace

When a spray tuyere is damaged it can generally be repaired after removal by welding a small piece of iron on the damaged part; or in the case of gun metal or copper tuyeres, a piece may be tapped or brazed in and the tuyere made as good as new at a very trifling tem provides a complete remedy. expense.

The principal causes of injury to water tuyeres of all kinds may be enumerated as follows

1. The stoppage of supply pipe through incrustation, or from the deposit of mud, shells, dirt, or vegetable matter accumulating in the tank or reservoir from which the water supply for the tuyeres is obtained.

"Drilling," caused by the constant dropping of metal or slag on an exposed part of the tuvere, which in the course of time forms a hole in the surface exposed to it. Where a defect arises from this cause it will be found in the upper side of the tuyere. "Drilling" is also caused by molten metal or sing attacking the nozzle and the lower surface of the tuyere this may arise from the defective workings of a furnace where the contents of one side of the hearth have become partially solidified, and there is no regular fall or "sink" of materials. In this case the molten metal or slag being unable to get away, the action of a blast may cause it to beat back against the nose or lower surface of the tuyere until the continued ac-

tion drills or burns a hole in it. 3. A third cause of destruction to tuyeres, which is more readily capable of explanation, arises when the materials in the furnace are so dense as to prevent the blast ascending freely, causing it to fight round the tuyeres, destroying the stopping, and leaving the greater part of the tuyere naked and exposed to heat, which under such circumstances is unusually intense round the tuyeres. A close tuyere, fed in the usual manner, when exposed to excessive heat will sometimes refuse its full supply of water, the point, and in some cases shaped or bent to either from the generation of steam in the tuyere, or from some other cause, and this may cause the tuyere to burn, and thus allow the

4. Slips of material after a furnace has been hanging will sometimes destroy or blind every tuyere in a furnace, by the fall of solid material on them or in front of them. Accidents to tuveres from this cause have not unfrequently caused severe explosions.

5. Another cause of injury to tuyeres, and of at casting time. In either case, or whether such a circumstance arises from any other cause, it long, is similar to a large number now in use, escape of any water into the furnace is to be

heat of the furnace, and cause no further damage than a trifling loss of heat; but the same action that causes a small defect will very often increase the aperture before any leakage can be detected, and when leakage occurs from the lower side of a tuyere it is not unfrequently of the same time the saving in actual cost over a few months, as compared with lower side of a tuyere it is not unfrequently of these tuyeres is admitted by every one who has tried them, and in most cases they have been found more durable than the tuyeres on the saving in actual cost over a few months, as compared with other tuyeres, has not been inconsiderable. difficult to detect by examining the blast open-

* Read by F. H. Lloyd, before the Institution of examination of the tuyers, all the tuyers open chance to learn

vinced from other indications that leakage was It is possible to protect the tuyere by this going on. He caused every tuyere to be resystem with less water than is required to pro- moved, and the materials below a tuyere on one tect a coiled or close water tuyere; but in side of the furnace were found to be literally most cases where these tuyeres have been soaking with water, and had to be raked out to adopted no change whatever has been made to a considerable depth before fire could be found. the connections regulating the amount of water What would have been the consequence if this mass of wet material had been forced into the molten iron below can only be guessed.

Several accidents of a very serious nature the same conditions; but where tuyeres on the have occured from the use of water jacketed old system have been giving considerable tuyeres in the Staffordshire district within the trouble and lasting only a few days, or at the last twelve months. In September last year an explosion occurred resulting in the death of stauces, proved far more durable than those four men, and in the following month the exof wrought from tube imbedded in the sides of previously used. In some cases where tuyeres plosion of a water tuyere caused very severe inequired renewal almost every week, when juries to fifteen men, of whom eight died either coils were used, spray tuyeres have lasted on the spot or within a short time afterward. In the latter case the severity of the explosion was occasioned by the iron having been allowed though now sufficiently proved, is not their to rise to the tuyere level through the careless-main advantage. Like all others, any derange-The tuyere which caused this explosion was them to burn out; and, in common with all produced at the inquest, and showed a small other tuyeres, they are liable to some of the hole about half an inch in diameter on the outer edge of the nozzle. This circumstance

though fortunately not resulting in loss of life. Frequently a tuyere that is heating may be have since been reported, both of them arising also from the explosion of water jacketed

A simple and ingenious arrangement has been introduced for the purpose of detecting leakage when it occurs from any close tuyere. It conconsequently, blow back any spray through the sists of a water balance, which, so long as the same amount of water flows from the tuvere as moment any leakage occurs the equilibrium is to iron up. If too large for this, there is still disturbed, and by this means a whistle or alarm amount of leakage occurs. The warning, howresult from the fall of this water into the in all cases prevent danger, as in the case of he destruction of a tuyere from a sudden slip in the furnace.

> The danger of accident from the causes alluded to is effectually prevented by the use of open spray tuyeres. Where incrustration is a cause of difficulty with other tuyeres, this syscrustation, as it forms, can be seen from the open end of the tuyere casing; and it is only necessary to stop the water supply for a few econds, or for a sufficient time to dry and slightly heat the tuyere, causing the incrustation to crack and fall off as soon as the water is again turned on. If it is but elight, the incrustation will very soon be washed away; but if hard and thick, a repetition of the process nce or twice will almost invariably remove it without damage to the tuyere. Stoppage of the spray pipes from incrustation, mud, or other impurities may occur, but it is not more liable to do so than in the water connections of other tuyeres, and in most cases the sediment escapes through the spray holes without any danger of choking them. With vegetable fiber or any large obstruction of course this cannot happen, and stoppage from these causes may result in the burning of a tuyere; but owing ing to the open end any such stoppage can be very readily seen, and may very often be remedied before any damage occurs

> If an open spray tuyere drills, the blast at once escaping through the aperture prevents any water entering the furnace, and thus avoids the dangers, inconvenience and loss of heat resulting from leakage where other tuyeres are Damage to the open spray tuyere arising from any other cause is equally free from danger, owing to the fact that no body of water is allowed to remain in the tuyere, and that the spray is at once blown back through the open end in the event of any aperture being made through which the blast can escape. Another advantage of considerable importance arises from its being unnecessary hastily to remove any tuyere or stop the water supply where this system is adopted, as a tuyere if damaged from any cause may be kept in use without danger and generally without inconvenience until an opportunity occurs for stopping the blast and replacing it.

Spray tuveres have been made of wrought iron, ordinary cast iron, malleable cast iron. gun metal and phosphor bronze; also of wrought iron with a nozzle of other metal. Open spray tuyeres are now in use at about one-half of the furvaces in blast in South Stafgreat danger where close tuyeres are used, fordshire, and are being adopted also in other arises from the slag, or in some cases the molten districts. The sizes already supplied vary in metal, rising up to the tuyere level. This may length from 10 inches to 3 feet, and in diameter happen from neglect of the workman to open from 21/2 to 61/2 inches at the nozzle. No diffihis furnace in tune, or from having a hard tap culty is found in adapting the system to tuyeres so as to delay the running of the molten metal of any size or shape. The tuyere, 354 inches diameter at the nozzle and 20 inches is when damage to close water tuyeres has been and is about the size generally used in the occasioned by the rising of metal or slag to the Staffordshire district. The 3 feet tuyere, 5 tuyere level that the greater danger from the inches diameter at the nozzle, is that now adopted at the West Cumberland Iron Compateared.

The leakage from a very small hole in a coll by furnaces. The 6 inch tuyere is the size supplied to some furnaces in the Cleveland discrete, will in most cases be evaporated by the leat of the furnace and cover a furnace of the size of the furnace of the size of the furnace of the furnace of the furnace of the furnace of the size of the furnace of the furnace

Ing in the usual manner.

An instance of this has been brought under the notice of the writer, in which a colled tuyere leaked, but owing to the position of the defect no indications of leakage were found on the position of the defect no indications of leakage were found on the position of the defect no indications of leakage were found on the procedure of Great Reliation have recombed to the collection of the collection defect no indications of leakage were found on the people of Great Britain have yet had a

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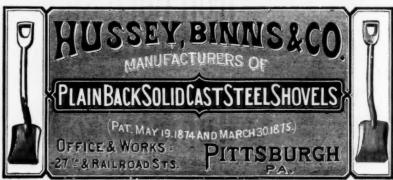
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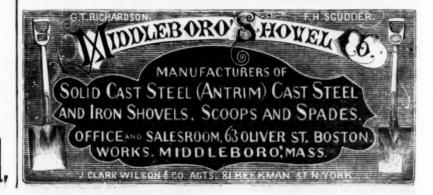
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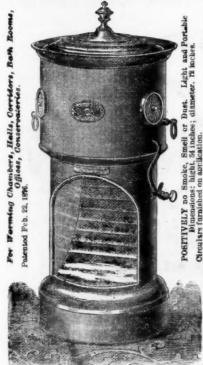
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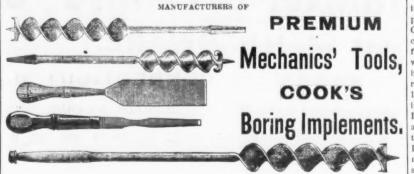


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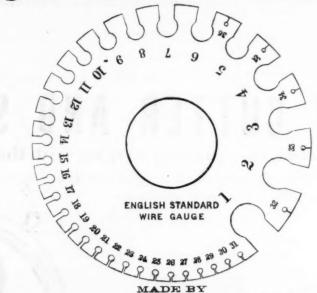
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The Telegraph for Local Purposes.

The growth of the local telegraph in our arge cities within the last ten years has been very rapid, and within the last four years sysems of local communication by telegraph have increased with great rapidity.

One of the most extensive and universal in its applications of these systems is that employed by the American District Telegraph Company. This company was organized in this city in June, 1872, with a triple purpose—to furnish protection against burglars, to give warnings of fire, and at a small expense to oring messengers for any occasion, within ready call. The company opened business in 1872, at its single office in Broadway, with 55 instruments in circuit and three messengers. In May, 1873, it had 1206 working instruments and 205 messengers, and to-day it employs more than 4000 instruments and about 500 boys. During the year ending October, 1876, 1,150,000 messages were delivered, and the present daily average is about 4000. The method of operation in New York is as follows: In the most suitable localities district stations are established-25 in all-each one of which "covers" about one-half a square mile of city blocks. In the house of each subscriber, who pays \$2.50 a month, an electric signal is placed which communicates with the nearest station. In case of fire, the touching of a spring communicates at once through the telegraph station to the nearest engine house the exact location of the alarm. The sounding of the burglar signal brings to the spot within three minutes one of the special deputy sheriffs of the company, and in case of necessity as many more as may be needed can be summoned. Where 50 subscribers are obtained in a single block, a special patrolman is stationed there, who is required every 15 minutes during the night to elegraph to the station, by means of signals at alternate corners, whether all is well. But the most important part of the company's work is the facility it affords for communication by messengers. The proper signal from any sub scriber brings almost immediately to him the boy who, at the uniform price of 30 cents an hour, is ready to perform any honorable office that may be required of him. By an arrangement with the Western Union Company, messengers take dispatches from subscribers' houses without extra charge. The most of the transfers of stocks in Wall street are made through the hands of these young fellows. They are selected with the greatest care, and are constantly subjected to the closest scrutiny. The cheap cab system, soon to go into operation, is to act in connection with the American District Telegraph. The unhired cabs will be ly the machine tools for metal, the parents of stationed near the offices of the company, so all other machines. These tools he describes out New York, Brooklyn, and the other large parture taken in punching metal by the macities of the Union.

The Autometic Signal Telegraph Company to furnish more absolute and trustworthy protection against burglary and fire. The raising vault is made known at orce by telegraphic signal at the Central office, and police aid is immediately sent to the spot. But the specialty of this company is its method of furnishing warning of tire. At distances of 20 feet apart throughout the buildings of its subscribers are of these instruments consists of a metallic cyloom, is given at the patrol stations of the New impossible." York Board of Underwriters, at the headquarters of the New York Fire Department, and at the company's office. The instruments may be so regulated by means of the screw that

duce Quotation Company, invented by Edeson,

and general news. Montreal, Canada. and two of Phelp's patents, of which the latter water-power.

are most used. There are about 2000 private lines in the city under the supervision of the Gold and Stock Company, and the number is fast increasing. Many business houses find it an almost indispensable part of their working apparatus. The superintendent of Lord & Taylor's establishments states that it would keep at least 20 messengers constantly busy to do the work that is done by their instruments, not to speak of the loss of time. The Law Telegraph Company serves as a means of private communication between lawyers who choose to subscribe. It began its work 18 months ago with 50 subscribers. It now has 115, and includes in this number nearly all the prominent law firms in the city. On the payment of \$250 a year, the company put up the wires and furnish the instruments, placing the subscriber in communication with all others on the list. Each office is numbered. When one subscriber wishes to speak with another, he signals both his own and the other's number to the central office, and the two are then put in direct communication. The lines connect also with the United States courts and the county courts of both New York and Brooklyn, and with the Western Union Telegraph Company. There are also many independent lines that, using Morse's sounding instruments, run from one portion of the city to another, or to manufactories out of town. The great obstacle in the way of the extended use of these is that the instruments require practical operators, and are therefore expensive. The longest private line in this country, probably in the world, is one belonging to Harrison Brothers & Co., of No. 115 Fulton street. It connects their house in New York with their Philadelphia house, and runs thence to their paint factories some miles outside the latter city. They state that, used for their own purposes alone, it is a great saving to them, and beside they lease it to other persons to a sufficient extent to reduce the expense to almost nothing.

Dr. Anderson on Some American Tools.

The well known Dr. Anderson, one of the British judges and Chairman of the Board of Judges at the Exhibition on Machinery and Tools, has contributed a series of interesting articles for the London Times upon the machinery display at Philadelphia. In the course of one of these articles he pays a tribute to the superiority of American machine tools. He says the section which most conspicuously brings out the enormous strength of America as a producing power is that of tools, especialhat by means of the signal they can be sum- as being designed for all purposes, and adds noned as quickly as a messenger. This com- that almost all are finished in a style superior pany is continually extending its work through- to that of any former exhibition. The new dechine exhibited by Hoopes & Townsend, of Philadelphia, he says " has created a sensation has not so wide a scope to its work, but it aims among engineers of all countries, the United States included. The nuts punched by the machine have two peculiarities-they are of inorof a window at night or the breaking open of a dinate depth and are punched cold. Nuts 1% inches in depth have a % inch punch passed through them." The doctor speaks of the admiration caused by this achievement, and of the skill shown when the secret of how it is done leaked out. He says the fluid property of cold iron or steel is taken advantage of by inplaced little thermostats or heat detectors. One troducing the element of time into the performance of the operation. The punch is given only inder, about three inches in length, in which is the pressure it can sustain, and then nature becoiled a spring band or strip of two metals of ing allowed its way, the instrument penetrates unequal expansive power, connected with the at a rate proportionate to the flowing of the metallic circuit. A screw connected with the mass. Whilst the experimentalist and the phiopen air circuit is inserted in the side of the losopher have been writing of the flow of cylinder. The strip and screw are insulated and solids, the natural law is here made use of the ends brought so close together that the ex- practically. "Unimportant as it may seem," pansion of the metallic strip by a certain additional amount of heat will bring it in contact Dr. Anderson. "The seed sown in thousands with the screw and close the circuit. At once of minds will bring forth many other applicathe alarm signal, announcing the house and tions in metal working that are now deemed

Wooden Steam Boilers .- In a "History of the Steam Engine in America," lately pubthe alarm will be given with any desired degree tute, we find an account of the wooden steam of heat. They are ordinarily set for 120 or 130 boilers used in 1800 for the first engines of the degrees, but may be made so sensitive that the Schuylkill Water Works. We quote as folbeat of the breath is sufficient to close the circuit. They are now placed in about 200 build-made of white pine planks 5 inches thick; they ings of this city, including many large mer- were 9 feet square inside at the ends, and 14 cantile houses. A reduction of five cents for feet long in the clear; braced upon the sid s, each \$100 is made by insurance companies in top and bottom with oak scantlings 10 inches the risks they take in buildings provided with square, the whole securely boilted together by 1% inch rods passing through the planks. In-Of the various telegraphic printing instru- side of this chest was placed an iron fire-hox 12 ments now used extensively throughout the feet 6 inches long, 6 feet wide and 1 foot 10 business part of the city for various purposes inches deep, with vertical flues, 6 of 15 inches there are many kinds. Two are used for stock diameter and 2 of 12 inches diameter; through reporting. The Gold and Stock Company have these the water circulated, the fire acting in use between 500 and 600 instruments of Cal- around them and passing up into an oval flue lahan's invention, in which the letters and fig- situated just above the fire box, carried from ures are printed in different lines. The Man. the back of the boiler to near the front, and hattan Quotation Company employ about 200 returned again to the back, where it entered instruments that print in a single line. There the chimney. This tire box and flues appear to are, beside, the instruments used by the Pro- have been at first made entirely of cast iron; then a wrought fron fire-box was made, the and two of G. M. Phelps's patent for financial flues still being of cast iron; this not being satisfactory on account of the unequal contrac-The methods of telegraphic communication tion and expansion of the two metals causing mentioned above are more or less public in leakage, eventually wrought iron flues were also character. In addition to these there are in put in. Great advantage was at the time sup-New York a large number of private lines, con- posed to be gained by the non-conducting necting the different houses of the same firm, powers of the wood, and also by the vertical offices and residences of individuals, or the flues in the fire-box. These boilers were used business places of firms engaged in the same for about two years, but, as might have been pursuits. The Gold and Stock Company have expected, it was found very difficult to keep introduced a system that is used quite gener- them perfectly steam tight. Cust iron boilers

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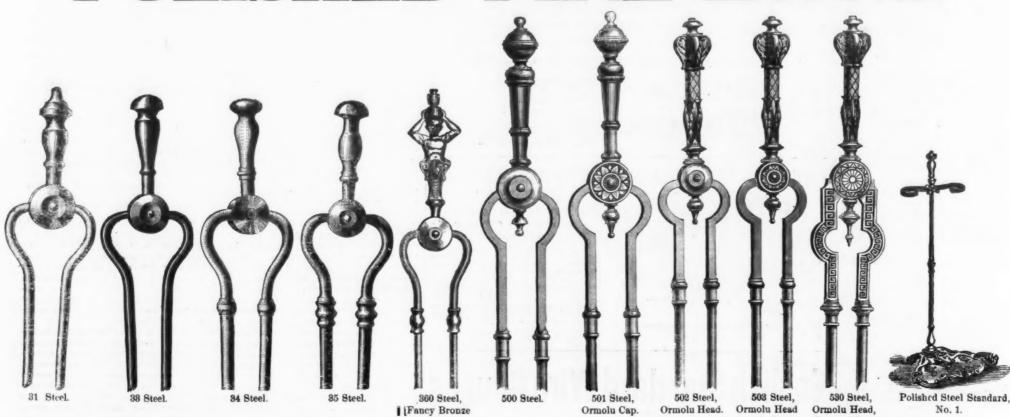
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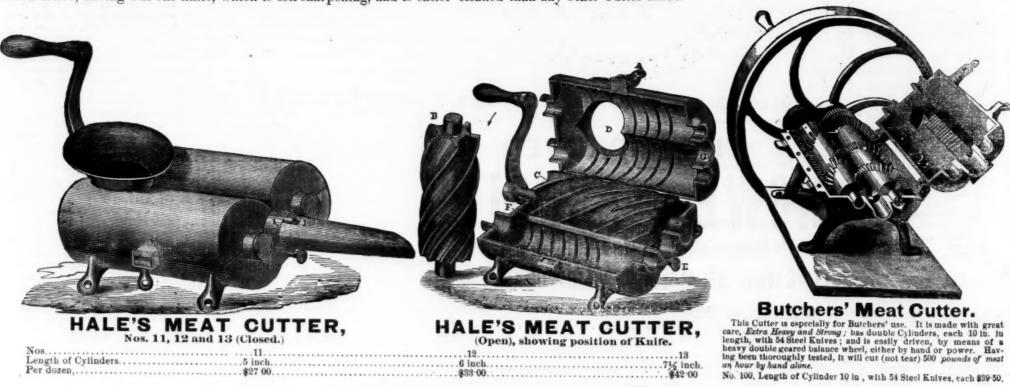
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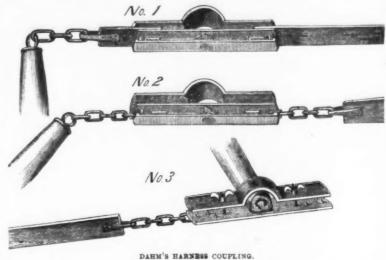
Dahm's Patent Harness Coupling.

We show in the accompanying illustration have experienced the difficulties of repairing broken harness without proper facilities. It is adapted to almost all varieties of conditions, malleable iron, of good shape, neatly fluished, the thumb-screws, and a break repaired belikely to occur to barness on the road.

the S hook which teamsters find it necessary poor and so dear that no one would use them

the company made its matches so cheap and oor that four or five were wasted for every one that produced a light. The Regiealumetter an article of novelty in the hardware line which became a standing joke in Paris, but to the poor will commend itself to the favor of all who it was no joke. The people began to complain and to find other means for striking a light.

The first year the match company paid its 16,000,000 of francs to the state and distributed and can be employed to temporarily repair any a dividend of 10 per cent., gained, be it noted, kind of accident likely to happen to harness on by speculations upon the Bourse with the hunthe road. It is a small implement, made of dred and odd willions of caution money. The second year it was found that, instead of seliand as light as is convenient with strength. irg 60 milliards of matches, or 40, or 30 mil-Our illustrations show it in three applications- Hards, it was impossible to count upon the sale to the mending of a broken trace strap, a broken of more than from 20 to 22 milliards. Then chain and a broken whiffletree. The adjust- came clamors and recriminations, with charges ment is effected easily and quickly by turning of fraud and contraband manufacture. The monopoly then obtained six laws from the Ascomes at once the point of greatest strength, sembly to protect its rights, and a large force and no delay need result from any accident of inspectors and detectives was organized to stop the smuggling and the contraband manu-The utility of this simple, convenient and facture, and they were given the police powe cheap device is greatest in situations where of entering houses, of entering complain harness is subject to severe and unequal against individuals, of seizing at once al 1 strains. They would be valuable as a part of matches which did not bear the monopoly the regular equipment of every teamster, car stamp. This finally became vexatious. Severa l or stage driver and carman, especially during persons resisted these agents, denying their pre-the winter season of "heavy wheeling." tended rights, and constant quarrels were the They are certainly a vast improvement upon result. And, meantime, the matches became so



can be placed in emergency. Further informa-tion can be obtained from the inventor and without having one's hand burned by a bit of street, N. Y.

A Match Monopoly.

A correspondent writing from Paris under date of Nov. 8th, tells the following curious

nd interesting story : We have here one of the most singular financial scandals that has been seen in the present century. It shows what the country has to pay for a bad tax, based upon false fiscal theo- like one-third of this ratio in Europe, it is yet France at once, and to get money by any flammability, internal bazard and external ex-means, M. Pouyer-Quertier imagined a tax upon posure are reduced to the minimum. Two exlucifer matches. It was estimated that the the Finance Committee estimated the annual between 18,000,000,000 and 120,000,000,000 is so great that one feels astonished at it, and discan rest. But in order to be prudent, it was modestly declared, the commission counted spreaders; and in addition to this, the country upon one-half of this only, or upon 60,000,000,-000. A tax of three centimes was then put upon each box of 100 matches, and five centimes, or one cent, upon each box containing 125 matches. As soon as this report was read, before any law upon the subject was passed, joists, rafters, etc., the people of Buenos Ayres the dealers raised the price of their matches are compelled by circumstances to use hard from two to three sous per box of 100. M. Pouyer Quertier thought that the state ought ings is, that if a large number of small wooden to share with the grocers in this sum drawn from the public, and hence raised the tax to like a grid iron-over two thin brick walls supfour centimes, and announced that this pro- porting their ends, a fire made below will burn duced 15,000,000 francs per annum to the state. through a few of the rods that are directly in But the first few months produced only 400,000 the flame, and there the destruction ends. francs, one after the other, leaving a deficit of the same manner, if a cart-load of shavings and 10,000,000 of francs in the estimates of the fi- pine wood were placed under a bed in a Buenos nance minister. Evidently something had to be Ayres house, and other furniture piled thereon, done to save the situation, and at that moment and the whole set on tire, four or five of the MM. Roche and Caussemille, the manufacturers | joists of the floor above would be burned, and of the famous wax tapers, offered to pay the the bricks and tiles would fall through, but state 16,000,000 francs a year if they were al- there the damage would end, for the house lowed a complete monopoly of the match trade | could not be set on fire. The mode of building in France. The offer was tempting, but guar- is as follows, the material of the walls being antees were asked. It seems that some bold brick: Each floor and the roof--for the latter speculators had mounted a company with a is quite flat-is supported by joists of hard to persuade some of our largest bankers-Pli- are placed rails of the same kind of wood, 3% let, Will, Vernes, Hattirguer and others-that x11/4 inches, and the space between the latter the company was sure of making millions. bridged over by thin bricks, 18½ inches long; The money was raised—the state accepted the another layer of bricks is then put on, and over offer-the new match company got out its it a floor of tiles. The roof is made in exactly stock, and had its bonds quoted upon the beam manner, except that it is laid in cem-Bourse at 150 francs premium. All the ent, and has a slant of 1 foot in 30 to 35. The small match factories were bought out by doors and windows have no boxes, but only the state at a valuation, the new company pay- frames for the sash, and there is no lathing, ing some 200,000,000 francs to secure its mono- nor wainscot, nor skirting. The doors and winpoly. When this was done, and the monopoly dow shutters are of cedar, or some hard wood created by law, the price of matches was fixed. that is slow to ignite. In a kilogramme-two pounds-there are 3500 wood matches, the two pounds being sold for 2 france. It cost the company 1 franc 96 centimes to manufacture them, and counting interest and the 15 per cent. to be taken off for the perquisite to pick up all the small pieces of

to carry, and upon which so little dependence | when it could be helped. Smokers had their manufacturer, Mr. F. H. Dahm, 183 William sulphur flying from the end of a match, while the country people went back to flint and steel with a wisp of tow steeped in a solution of sulphur. In a year's time matches went out of fashion, and the great match company suspended payment.

The American Exchange and Review says: While numerous fires destroy about 80 cents in the \$100 annually of the whole combustible property of the United States, and something ries and calculations. In 1871, when M. Thiers a curious fact that there are cities and towns was so ambitious to pay the Germans out of almost absolutely fire-proof; that is to say, inamples of such flame exemptions exist in country consumed 18,000,000,000 of matches Buenos Ayres and Montevideo, two South each year. With large ideas upon this subject American capitals, about 100 miles distant from each other, the former of which is still desticonsumption at 120,000,000,000. The difference tute of anything like a sufficient water supply, while the latter was similarly deficient until a few years ago. South American earthquakes posed to ask upon what basis the two estimates make one story houses the fashion in South America, and one story houses are poor flame around the two cities named is poorly supplied with timber. So the houses have been built with a view to the greatest possible economy of wood, and there is an absence of heat expanding iron and heat disintegrating stone. The rule in the construction of buildwoods. rods, like canes, be placed-say 2 mches apart, capital of 40,000,000 francs, and had managed | wood laid about 18 inches apart. Across these

Peat charcoal is very easily and cheaply made. In West Cork, from time immemorial, country blacksmiths have been allowed as a trade, the company loses 24 centimes, or nearly peat waste from the making up of peat stacks 5 sous, on every box containing 2 pounds of at the bogs by farmers and others. All the wood matches. This difference was made up small pieces of peat are collected and laid up by abstracting a number of matches, selling 2700 for two pounds, instead of 3500, the public soft peat or mud from the bogs. Fire is then applied, and then che peat allowed to smoulder thus losing 800 matches in each large box by the monopoly. But this was not enough, and

This is the whole of the process. **NORWAY IRON**

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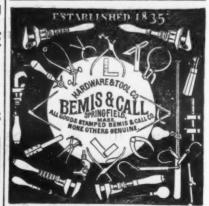


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Our Production and Consumption of

Iron.

There is an idea prevalent in all branches of the iron trade that the amount of iron made in the country has decreased very materially since the panic. This idea is founded upon a misconception. We have no figures at the present time showing the make for 1876, but we have for 1875 and previous years. Comparing the make of the in Bessemer, but this is so well known we different classes of iron and steel for 1875 with the make for 1871, we find in every item but one-blooms-a decided increase in 1875. In pig iron the increase was, in for production. There are hundreds of writer appears to have mixed up in mind which had been made. Shipbuilders and proval generous and hearty. Here was an round numbers, 20 per cent.; in rolled idle furnaces, both blast and puddling, that the specification for the foot bridge wire engineers were delighted. The later pro-opportunity for the Engineer. It had a

pend the following table. The figures are for their products. from Mr. Swank's reports:

Products.	Make m 1872.	Make in 1875.	Percentage of mak of 1875 to 1872.
Pig iron. Iron rails. All rolled iron, including nails, but excluding	2,854,558	3,266,581	79
	905,930	501,649	55
rails Bessemer steel rails Kegs of cut nails and	941,992	1,097,867	116
	94,070	290,868	309
spikes	4,065,322	4,729,881	116
	29,260	39,401	134
	3,000	9,050	301
All other steel except Bessemer	7,740	12,607	165

In view of the present great depression in the iron trade, these figures will create some surprise. Notwithstanding the cries of "dull trade" and "nothing doing," it appears that the country made threefourths as much pig iron in 1875 as in 1872. nearly half as many tons of iron rails, onesixth more nails, one-sixth more rolled iron crucible steel, three times as much Bessemer and open hearth steel, and two-thirds more other steel.

Another thing to be noticed as a fact full of significance is, that the decrease has that is, pig and iron rails, while the inin the higher forms, such as rolled iron and steel, and we are confident that an analysis of the figures of rolled iron would show that, in its higher forms, such as sheets, hoops and cotton ties, the increase has been more marked than in bars. So, also, it would be found that iron has been rolled into shapes to a greater extent than

There is another point which this table does not show, but which is of importance in connection with the increase in make. The consumption of iron has kept closer to the make in 1875, and this year as well, than in 1872. That is, the aggregate stocks of iron are far less to-day than four years ago. Consumers are buying only as they are pressed. The assortments in the hands of merchants may be as complete as ever, but the completeness is in having small lots of a great many kinds and not much of any one kind. Speculators do not anxiously inquire for "good things," and are not "snapping up" large blocks of pig or large lines of merchant iron. The yards of furnaces, mills and foundries, the warehouses of merchants and consumers, show no such stocks as in 1872.

To get at the true consumption of the ountry, however, we must consider the decline in imports. Pig iron fell from 277,232 tons in 1872 to 59,849 tons in 1875; bar iron from 118,227 to 26,552; band, hoop and scroll, from 11,708 to 429, and other irons in proportion.

But notwithstanding all this, though the prices, empty furnaces and idle mills all for the wires now in position. over the country. Why is this? The reason of the idle furnaces and mills is specifications for the wire for the bridge that, though the production of iron in itself, the editor says: that, though the production of from in 1875, is not much less than in 1872, the capacity for production has been largely increased in the intervening years. The number of blast furnaces completed from the beginning of 1872 to the close of 1875 was 153, all of them of modern construction, and, as the rule, of much greater cather though practical wire drawers and cable manufacturers. For these reasons we can well understand how the specifications in question came to be worded so stringently as to place them beyond the reach of English competition. tion, and, as the rule, of much greater capacity than those built previously. Some furnaces were abandoned, which left 713 completed stacks in the country, Dec. 31, 1875, against 571 Jan. 1, 1872, or a total increase of 142.

In regard to rolled iron we are not in mating from the best data we have, the capacity of our rolling mills, exclusive of rail mills, was increased from late in 1871 to the close of 1875, 400,000 tons per annum by the building of entire new mills. In many cases the capacity of old mills was increased. Two, three, or four more puddling furnaces were added, and in some cases large additions to plant were made. In Pittsburgh the puddling capacity was increased one-third in the time mentioned. The total capacity of the rolling mills, exclusive of rail mills, in the United States. Dec. 31, 1875, was 2,249,465 net tons. The same state of affairs exists in other branches, such as iron rails and especially need not go into details.

The reason of low prices is not so much overproduction as this enormous capacity

fore the panic, there is not such a decided ers are aware that stocks are low, but they showing, though in many forms of manu- know that the production of the country facture 1875 will show a very considerable | could be increased 20 per cent. within a relative make of the two years was, we ap- months, and they fear to ask a fair price

It is difficult to see a way out of this. We are looking for a return of our former prosperity, but we already have it, so far as iron is concerned. What we really need former requirements. To utilize our present productive capacity would require a consumption of at least 20 per cent. more may come, but not immediately. In the meantime we must be satisfied with lower prices and smaller margins. Our mills consent to practice those smaller economies that our iron works knew nothing of five years ago. Anyone could make money on skillful guidance to avoid bankruptcy now.

The Contracts for the East River Bridge.

In a recent issue of Ryland's Iron Trade Circular we find an article upon the of all grades excepting rails, a third more Brooklyn bridge wire contracts, which contains a very large number of errors. The editor seems to be in rather an unhappy frame of mind about the contracts, and although he does not exactly cry "sour grapes," he says, in conclusion, been only in the crudest forms of iron, that they are certainly beyond the reach of English manufacturers, simply because crease, as exhibited by the table, has been the bids must come through "well defined channels." In the opening of the article we find the following statements:

cle we find the following statements:

The fact that tenders for supplying 3400 tons of galvanized steel cable wire, for the erection of a suspension bridge across the East River, between Brooklyn city and New York, had been advertised in the English newspapers, seemed to buoy up the hopes of certain manufacturers on this side the water that the reported improvement in the United States trade was at length stimulating in a very legitimate fashion American business with the old country; and we were gravely told that such an application had never reached England from American consumers for a long time past. It is no doubt perfectly true that tenders have been invited here for the supply of this large quantity of steel wire for making the cables for the permanent suspension bridge just referred to; but it is also true that the two cables at present extending from New York to Brocklyn are formed of beat English patent steel plow wire, the special manufacture of a Warrington firm of the highest repute.

The only true statement contained in this

The only true statement contained in this paragraph is that the tenders had been in vited in England for the iron for both the temporary bridge ropes and also for the fron for the main cables. It is not true that the cables at present extending from New York to Brooklyn are of English steel plow-wire, nor were they made by the Warrington firm mentioned. The following are the bids for the wire rope for foot bridge, cradle cables and temporary

structure :
J. A. Roebling's Sons & Co
Van Wart & Macov 48,994-61
John & Edwin Wright 42,663-21
Warrington Wire Rope Works 58,357.93
Chrome Steel Co 39,849-19
T3 41 5 44 111 1 41 4 41 797

From this it will be seen that the War rington firm, which manufactures the steel plow wire were the highest bidders on this consumption of American made iron is lot of wire. The Chrome Steel Company nearly as great as in 1872, and though were the lowest and, of course, took the stocks are lighter, we have ruinously low contract, and have supplied the material

In the next paragraph, speaking of the

a strong, uniform wire. Upon this point and in a work like the East River Bridge possession of as satisfactory figures. Esti- lightness is also essential. Without it the What then are the facts? In the first place the wire must be made from the best cast crucible steel (no Siemens-Martin nor Bessemer will be accepted), hardened and tempered, and must, after galvanizing, stand a breaking strain of 90 tons to the inch and be drawn in pieces. of 90 tons to the inch, and be drawn in pieces of not less than sixty pounds, and to be de-livered at the rate of 200 tons per month should the committee require it. Well, now, there are livered at the rate of 200 tons per month should the committee require it. Well, now, there are only two wire firms in England who can make this specific article—one, in the neighborhood of Birmingham, famous for the production of homogeneous wire for ocean cable purposes, and the other a no less eclebrated maker of patent steel wire in Lancashire. Of this the engineer who drew the specifications could not be wholly ignorant, since it was well known that these firms were not disposed to sacrifice their regular customers for the time being for their regular customers for the time being for the sake of this tempting order. So it is not uncharitable to look upon the whole affair as a "bogue contract," for we have the assurance, almost amounting to certainty, that not only the wire but the steel wire will be made in

In the first sentence of this quotation the

and nothing more; yet our contemporary strength; next, size; and then uniformity. We quote further:

If we are correctly informed, overtures have been made to at least one English firm by American wire manufacturers to go over there American wire manufacturers to go over there with a competent staff in order to put Yankee workmen in the way of hardening and tempering wire by a patent process; and as considerable inducements were held out to this end, in simple consideration of this large order, it follows that the 'cute Yankees knew pretty well where the contract would be placed."

This is no more a proof of knowledge of where the contract is to be placed than

which have come under our observation, them beyond the reach of English competition. The specifications are by no means stringent for a manufacturer who can make a strong, uniform wire. Upon this point we have taken especial pains to satisfy ourselves. American engineers are accustomed to the use of very strong material, and in a work like the East River Bridge lightness is also essential. Without it the work is impracticable. We quote further:

What then are the facts? In the first place the wire must be made from the best cast crucible steel (no Siemeus-Martin nor Bessemer will be accepted), hardened and tempered, and must, after galvanizing, stand a breaking strain of 90 tons to the inch, and be drawn in pieces from has been copied somewhat generally there will be no English wire used in the from has been copied somewhat generally into American newspapers, and has thus had an opportunity of creating a false impression in the public mind.

Armor and Guns.

guns are once more ahead. When Cam- are only carrying out their one policy of mel & Co. rolled the 22 inch plate for the editorial management-to differ from Italian government, a section of which Engineering on every subject concerning was on exhibition at Philadelphia, it was which a difference of opinion is possible. not only the thickest and heaviest plate Engineering found in the Centennial much capable of resisting the heaviest guns well considered and valuable, and its aptron, 331/3; in Bessemer steel about three are watching for anything like a re and those for the bridge wire. There is duction of a plate somewhat heavier, 24 chance to take a position diametrically op-

fold, and in other steel nearly double. munerative market and brisk demand, and the best reason in the world why the steels inches thick, confirmed the opinion. It Compared with 1872, the last full year be- they will be lighted at once. Manufactur- mentioned will not be used, and that is be- was thought that we were ready at last cause they are not made sufficiently strong to build impregnable forts and ships, for and uniform. After most careful consid- the armor for them was ready. Unfortueration of the specifications, we fail to see nately for the naval architects and milincrease over 1872. To indicate what the fortnight and 50 per cent. within three anything which bars out from competition itary engineers, the gun makers were yet any wire that is sufficiently strong and unto be heard from. The recent trials of the iform. Of the material it says: "Only a hundred ton gun at Spizzia destroyed all steel rod which will make a wire that these hopes. The 22 inch targets of both comes up to the standard here laid steel and iron were punched, and one was down." The chief points are as follows: so completely demolished that, had it been make and consumption of American made It must be No. 8 Birmingham wire gauge, a part of a ship's side, the ship herself and shall run 14 feet to the pound. To would have been seriously injured. The is a demand far in excess of our greatest increase its strength it must be tem- plate was not only smashed but the backing pered and hardened. The breaking strain was wrecked. The iron plate held together is to be 3400 lbs., or at the rate of 160,000 a little better and was only punched, but the lbs. per square inch; and just here we sus- 2000 pound shot came through the backing from than the country has ever used. This pect the grievance lies: the English and all, and still had a considerable velocmakers cannot produce so strong a ity. The gun, in fact, proved itself so powermaterial on a commercial scale. The ful that a 24 inch plate would be required to limit of elasticity must be as high as match it. Not a ship affoat could keep out need the highest business talent, and must 1600 lbs.—a very reasonable figure for a shot from this gun, and it has been even any material having the required ten- suggested that in case a turret were loaded sile strength. The modulus of elasticity with iron sufficient to resist it, it must be between 27,000,000 and 29,000,000. would be knocked overboard hodily. the margins of that time. It demands In the damp sea air of our harbor paint. Plating can be increased in thickness ining cannot be depended upon for protection definitely, and 36 or even 40 inch plates are from rust, hence galvanizing has to be em- not beyond the possibilities; but while such ployed. Straight wire is needed, and as plates are all well enough for fortifications, this is best obtained by the use of a certain the naval architect shakes his head and patented process, the Bridge Company as- wonders what manner of slips he shall sume the royalty, so that, in bidding, the build to carry 25 or 30 inch armor plates contractor is not hampered by the trouble at sea, and at a speed of from 15 to 16 and expense of obtaining a license. The miles per hour. A ship of less than 10,000 tests are, we admit, somewhat rigid, but tons will not answer, and it is not quite certainly no more so for English than for certain that a larger one will be any better. American manufacturers. The tests are It is becoming a serious question whether by no means too severe for a good article, it is worth while to carry any armor at all. and are not of a character that the man. There is no reason to suppose that a 30 ufacturer of a wire fully up to the stand- inch plate will be able to resist the guns ard need fear. From one ring in 40 a 60 which may be built, for the 100 ton gun is foot test piece is taken; from one ring in not the limit of size by any means. Given five a 6 foot test piece is taken; from every guns capable of punching the armor plates ring a 16 iuch test piece is taken for tensile of a ship, and it makes little difference strain, and a 12 inch piece for bending. Whether a ship is plated or not when she The aim of all this is to secure uniformity goes into action; and so far as the sailors are concerned, we fancy that they would a seems to think all this has been done simply little rather have the unplated vessel than to exclude English manufacturers. If they the "iron coffin." In this country we did are excluded, the probabilities are that they a very wise thing to get rid of as many of either cannot make wire good enough or our iron-clads as possible. When we want else cannot compete in price. We do them we can build; had they been kept know that such wire has been made here, the expense would have been wasted, and and can be again, and at less prices than we should have had to build new ones in any of the foreign makers have offered. spite of ourselves. If nations must go to The whole spirit of the specification, from war they must have new ships to keep up beginning to end, aims to obtain, first, with the guns, and at present those without armor stand as good a chance in action as the iron-clads, and better if they have more speed.

Cross Purposes.

In an article on the Centennial Exhibition and its results, the Engineer, with that sadness and sweetness which has always characterized its comments on American events, gives utterance to the following opinions :

This is no more a proof of knowledge of where the contract is to be placed than the fact that the bridge engineers specified for the use of a certain patented process in straightening and then secured the manufacturers from paying the royalty. If they wish to use an English method of tempering, they do well to secure the license, and it is a mere matter of justice to protect the bidders, whoever they may be. Again:

It may be that the wire for the cables upon which there will be the greatest strain will after all be obtained from one of the English wire the bills, to which reference has been made; but, unless probabilities belie the situation, a large wire company at Worcester, Massachusetts, will get the liou's share of the contract. Nominally, the contract is an "open one," but really it is open to no firm or individual who has the temerity to take orders except through the strength of English iron is vastly better than that of any of its recorded tests which have come under our observation, there will be no English wire used in the word of the properties of the properties of the properties of the properties of the properties. The history of the Centumpal reflects little credit on those officially connected with it who are not English exhibitors, and none at all on the Americans. From first to last the gills with the week in selected by them were comparatively trifling, and it is due to Americans and that as they left nothing undone to render the enterprise commercially disappointing to every one, they have been incessantly harded by the due to render the enterprise commercially disappointing to every one, they have been incessantly arranged by the other incessantly arranged by the other incessantly arranged by the other comparatively disappointing to every one, they been incessantly arranged by the other inc trast. In certain cases judges were unable to hold competitive trials. So bad was the feeling among rival patentees, that they knew it would of American newspaper writers.

We hope no American reader of the Engineer-we believe it has some-will imagine for a moment that this extract gives expression to public opinion in England-nor, for the matter of that, in the Engineer office. In writing thus about the In the contest between guns and armor, Centennial the conductors of that journal which had ever been rolled, but it was to commend. Its criticisms have been fair,

position very similar to that of the Gazette is that charter parties often contain an express stipulation to the effect that though the vessel and the Independent, of Eatenswill. The function of each seems to be to show that the editors of the other have an inherited fondness for thistles, and to construe whatever they may say into the He! Haw! so familiar to British ears. Fortunately for Engineering, it is usually the first to express its opinions on subjects which interest its readers, and it is therefore less hampered in these matters than its neighbor, which usually waits to find out which side it must take until it knows which side Engineering has taken. This may be pleasant diversion for the editors of these journals, but we should think it would be monotonous for their readers in the course of time.

The New Dutch Ship Canal.

The conquest of Holland by the Dutch was supposed to have been consummated some 23 feet, great enough for any vessels a long time ago, when it was announced except the heavier class of deep loaded Atthat the Dutch had taken Holland. As a lantic steamers. It has been compared that they are still at the work of conquest, deeper, and a little longer; but it seems to in which every foot of advance must be us that between the two there can be no contended for with the sea, which has as comparison whatever since this is so much little respect for territorial boundries now as in the time of King Canute. In Holland, however, thanks to the skill

constant inroads upon the sea. While gaining new territories from the water tinents upon which to levy toll, while this they are not forgetful of their water ways, and one of the first things taken into the great city. It is plain, we think, that calculation when a lake or arm of the sea this has been a greater undertaking in is to be reclaimed, is the way in which proportion to the gain than the other; it the navigation is to be provided for. This certainly has needed greater pluck, skill object accomplished, and abundant means and judgment. The new canal was opened provided for the accomodation of shipping, they begin the work of driving out the sea in carnest. Accustomed for years, we may say for centuries, to the construcundertake projects in what may be termed lights, etc., etc. marine engineering which would, to say the least, be undertaken with hesitation by other nations. The monster canal of the world, the new canal (Niewe Diep) connecting Amsterdam with the North Sea at the Helder, was undertaken in order to give an outlet to the sea and allow the largest ships to reach the city. This canal was made necessary by the storms in the early part of this century which practically closed Zuyder Zee to sea going ships, by rendering its channels shallow and more difficult of access. The sea is in fact gradually being filled up by the action of the storms and the silt from the land. The new or North Holland Canal is some 50 miles in length, 21 feet deep and 125 feet wide. The locks are of enormous size, capable of passing a ship of more than 300 feet in length; in fact anything that floats on that draught of water can pass through this enormous artificial arm of the sea. This canal did not enter the sea at the point nearest the city, and another canal has long been projected in connection with the project of draining the Zuyder Zee. The latter task is of such grand proportions that no nation less skillful in such matters than the Dutch would dare venture such an undertaking. Yet they will not only propose it, but carry it into execution, and in time leave nothing of this dreaded sea but a network of the dreaded sea but canals. The whole length of the Zuyder have broken up; at least it was by no this gulf, or sea, the width is about 20 the central portion of this sea, some 500,000 acres of land would be reclaimed and room made for a population of about 200,000 persons.

The canal of which we speak has been but very recently opened, The following from the London Times gives many interesting facts relating to the canal:

esting facts relating to the canal:

Amsterdam, which sprang into sudden importance when the Spaniards had ruined Antwerp, had begun during the last few years to see before its eyes the danger of its joining the malancholy sisterhood of the dead cities of the Zuyder Zee. The channels by which the riches of the world were once brought to Amsterdam, to be reshipped at the profit of the Du'ch capitalists, have become too shallow for the great vessels of burden which carry the merchandise of modern duys, and even the spices of the Dutch East Indies, the coffee of Java, the sugarindigo, tobacco and rice from the tropical Dutch East Indies, the coffee of Java, the sugar-indigo, tobacco and rice from the tropical dependencies of Holland in the East and West go now, by preference, to Rotterdam, which has long been growing at the expense of its more famous neighbor. The old route from Amsterdam to the ocean was by the Zuyder Zee, but the storms and sandbanks of this danger-ous guilfield, in 1819, to the construction of the ous gulf led, in 1819, to the construction of the North Holland Canal from Amsterdam to the Helder, the northernmost point of the province

posed to that taken by Engineering, and it would have been false to its traditions if it had failed to seize the opportunity. If Engineering had taken the opposite ground, the Engineer would have pronounced the Centennial the greatest success of the century.

The intelligent reader of both Engineering and the Engineer cannot have failed to notice that they stand to each other in a position very similar to that of the Gazette may be ordered, perhaps, to any port of the British Isles or on the Continent of Europe between Havre and Hamburg, she shall not be compelled to go to Amsterdam. The new canal will probably put an end to this invidious exception.

Although the cost of this magnificent work has been about \$10,000,000, there is little doubt that the undertaking will pay. In advantage to the city it certainly cannot fail to be a profitable investment, even though the receipts are not sufficiently large to more than cover the running expenses. Judging from the fact that some thirteen million cubic yards of excavation has been done, and the length of canal banks on the main canal and its 10 branches is somewhere in the neighborhood of 40 miles, the work cannot be considered an expensive one. The depth of water, when completed, is to be ample, matter of fact, however, it must be said with the Suez Canal, which is a trifle greater an undertaking. That was a pro ject in which the whole world was interested, while this is peculiarly a local of the Dutch engineers, the land is making enterprise of a single country. The Suez Canal has the commerce of two conone depends upon what comes to a single upon the 21st of November for the general commerce and the tariff per ton announced. This is expected to produce the necessary revenue to provide tion of ship canals, they do not hesitate to for the maintenance of banks, locks,

The British Arctic Expedition.

The British Arctic Expedition has just returned unsuccessful, after having been absent one year. When it left the English papers told us that the outfit was the most complete ever taken out by a polar expedition, that it was sufficient in quantity for some four or five year's stay, and that, if there were no insurmountable obstacles the expedition must be successful. The ships, it seems, encountered no great difficulties, sailed further north than ships had ever been before, and found everything favorable to success, but as often before in British naval history, 'some one had blundered." Scurvy made its appearance, and, at the first oppor tunity, the expedition returned, having practically accomplished nothing. A long shore line has, it is true, been added to both the Greenland and American coast, and the explorers went within 400 miles of the pole across the ice. Another year would, in all probability, have given us more knowledge of this circumpolar sea than we have ever had. It is even possible that, during the late summer of the present year, the pole itself could have been reached by the ves-Zee is some 60 miles. At the mouth of means to be regarded as a fixed barrier. miles, while in the wider portions it is this advantage had to be abandoned; the males, while in the wider portions it is well fitted expedition was attacked by the central portion of this sea, some scurvy, and the cause does not yet appear, but a blunder it must be. Arctic voyages are no longer necessarily attended by this sylvania and the Baltimore and Ohio Railroads scourge, and the British admiralty probably will have the satisfaction of thanking themselves for the failure.

New Publications.

Names of Stoves, Ranges and Furnaces. Pre-pared under the auspices of the National Associa-tion of Stove Manufacturers.

A list of the names of stoves and furnaces in directory of stoves which should give their of the able secretary of the association, Mr. Josiah Jewett. Only 150 manufacturers replications were made. This indifference to the

which did not respond in the first instance will which has not yet been introduced in this coun-

use at this time, of 4275 stoves, ranges and connects the several buildings, on which a loco-The names of the stoves made by each founder allowing them to cool. The works were run on or manufacturing house are given together in single turn until the middle of March (about the body of the work, but the double index 61/2 months), since which time they have been is so thorough that one can find any name, run on double turn. The product of the first whether he knows the maker or not.

The value of such a register will be seen at a glance by every manufacturer and dealer. The naming of stoves is a matter of no little trouble The maker desires to select some name at ouce euphonious and easily remembered, and at the same time avoid infringing the copyright of any other maker. If he finds a name that suits him he cannot assure himself that he has the right to use it without a search at the Patent Office. It was to obviate this difficulty that the National Association of Stove Manufac turers authorized its secretary to compile the name register. To supplement the book a register in manuscript will be kept, and a note to Mr. Jewett will secure for a manufacturer information as to whether the name or names since the book was published.

The utility of the register to the dealer lies in the fact that it gives him the name and ad- in its first year in this or any other country. dress of the makers of any stove he wants to purchase or know about. For many good reasons the names of abandoned stoves have not been We can honestly compliment Mr Jewett not only upon the success of the work of compilation and arrangement, but upon the beauty and excellence of the mechanical execution. The book is beautifully printed on heavy paper, in large clear type, and with wide margins. We are not informed whether it is printed for gratuitous circulation or for sale.

Bessemer Steel at the Centennial.

(Continued)

THE EDGAR THOMSON STEEL COMPANY, LIMITED. In Main Building, T 66, the exhibit of this ompany occupied a prominent position fronting on the circle at the intersection of the main airle of the south span of the building with Building, and embraced a display of the large cross assle C, and consisted of the following: Two steel ingots, each of the size required to make four rails and weighing about 2800 lbs.; iron and steel merchant bars, fluger bars, steel one ingot cast under Wm. R. Jones' process of compression by steam-this ingot was polished to show its solid surface, and looked like a forg- shoes (Walker's rateut), steel carriage axles, iron ing; a Bessemer steel crank forged and pol and steel ralls, iron and steel rivets and spiker, ished; a four rail bloom, being the product of iron and steel fish plates, bolts and nuts, steel an i got similar to those first named, and weigh- wagon and carriage tire, and various articles, ing about 2700 lbs.; a show case containing pieces of rails polished and nickel-plated, and strel produced by them. In respect to the vaone twisted rail polished but not plated; also, riety of forms into which Bessemer has been one pair of locomotive side rods, made by the Pittsburgh Locomotive Works, from Bessemer ing in the whole Exhibition, and was well worthy steel furnished by this company, and two bent of study, as showing the capabilities of the rods, one to the form of the letter U and the metal. Especially is it important in view of the other to the letter S, without crack or flaw. present overproduction of this metal. The ex-The outside exhibit was situated on the south hibit was arranged with great taste and the side of the Main Building, between it and the Mineral Annex, extending from doors C to D in various ways. The steel shafting was turned of the Main Building, and consisted of the fol- and polished to show its wonderful freedom lowing: One steel rail 62 lbs. per yard, 120 feet from defects. A whole rail was polished, and long, weighing 2500 lbs., and being the longest another one polished and then twisted, this and heaviest rail in the world; one rail 62 lbs. having been done to develop flaws, if such per yard, 98 feet long; one rail 62 lbs. per yard, should have existed. Another steel rail was 82 feet 5 inches long; one rail 67 lbs. per yard, twisted without being polished, and a certificate 62 feet long; one rail 60 feet long, 60 lbs. per from the officers of the company stated that these yard, twisted cold with 20 complete revolutions rails were taken from a lot then being rolled without crack or flaw; two rails, each 30 feet long, that have never been "cold straightened," that they as well as the other articles shown were being the product as taken from the new "hot taken from the regular product of the works, bed" in use only at these works; one rail 20 no special stock having been used in a single feet long, twisted cold, being a part of the first instance. There were iron and steel railroad rail made at the works. The long rails above axles shown bent double cold, and steel carriage named were all made at the first trial from the axles tortured in all kinds of shapes. ordinary steel that was then being used to fill steel railroad axles were turned and polished, an order, and of the pattern then being rolled, and were so perfect that not a single seam or flaw that of the New York, New Haven and Hart- could be detected. A display was made of conford Railroad Company. The Edgar Thomson nected links formed of steel carriage tire, run-Steel Works are located at Bessemer Station, 11 | ning from the larger sizes down to the smallest miles east of Pittsburgh, on the main line of and showing perfect welding. Sand only was the Pennsylvania Railroad, and on the Pitts- used in accomplishing this. burgh Division of the Baltimore and Ohio a steel polished ring was shown, in which the Railroad. The property of the company exweld is so perfect that it is utterly impossible tends from the Pennsylvania Railroad to the to detect where it is made. The analysis of the Monongahela River, and consists of 100 acres steel in this ring is given as follows: of ground. The works are erected on the portion of the property lying between the Pennwith tracks connecting with both roads and a track leading to a landing on the Monongahela River, where a dock has been built for loading rails and an elevator for receiving coal. The ground was broken for the erection of the works in April, 1873, and work was commenced on the buildings in May, 1873. The completion of the works was delayed (although not at any time entirely suspended) in consequence of the financial panie in September, 1873, so that use has long been needed by founders, while a they were not completed until August, 1875. The first blow was made on August 28, 1875, at names, class and by whom manufactured has 5:15 p. m., and the first rail was rolled on Sepbeen long wanted by the stove trade of the tember 1, 1875, at 12:55 p. m., both being encountry. This want has been particularly met tirely successful. The works at present consist in the volume before us. Unfortunately, it of a converting department with two 6 ton conis not complete, although this is not the fault verters, and all the appliances necessary to their operation; a boiler house containing 20 tubular boilers, which supply all the steam used at sponded, and it was impossible to get the lists the works; a rail mill containing 7 Siemens of the remainder, although seven separate ap- heating furnaces; a blooming train with Fritz tables, a sail train, a hot bed of new construccompleteness and accuracy of records and tion, a hot saw, two cold saws and the usual waste. For clinch nati purposes they are won-

hoped, however, that the omissions will be cor- sheds for storing materials. The company ex- horseshoes has been the supposed difficulty in rected in future editions. The secretary has a pect to proceed very soon with the erection of welding on toe calks, and to disprove The volume before us contains the names, in Europe. A system of narrow gauge tracks year's operations has been as follows:

1875. September October November	Ingots, Tons. 1,554 2,318 2,673 2,094	Raile, Tons. 1,119 1,818 2,145 1,480	Merchant Steel. Tone.
Four menths	8,638	6,362	36
January	2,550	2,055	59
February	2,407	1.811	19
March	4.246	2,800	3
April	4,0%6	2.652	44
May	5,401	4,128	245
June	4,290	3.346	41
July	4,510	3,548	11
August	4,796	3,873	15
Total	40,867	30,775	78
The above show	s an outp	ut of 31,5	64 tons of

finished product for the first year's operations. he wants to use have been placed on record during over one-talf of which time the works were only running on single turn, a product teretofore unequaled in the history of any works The rails produced during the first year's operations have been very widely distributed through 19 states of the union, extending from Massachusetts on the east to Texas in the southwest. and including California. The location of the works in its proximity to the furnaces of Pittsburgh and the Mahoning and Shenango valleys n which are produced from Lake Superior ores the best Bessemer metal made in the United States, insures a supply of materials of the best quality, while their being located in the midst of the best and cheapest fuel known in the world adds greatly to the economy of their operation, the result of which has been a product unsurpassed in quality by that of any Bes emer works in the United States.

The principal exhibit of

THE ALBANY & RENSSELAER IRON & STEEL CO., of Troy, N. Y., was located in Sec. S, 68, Main range of manufactures of that company, including pig iron, steel and iron rails, steel shefting, crowbars, iron and steel railroad axles, steel railroad frogs (Close's patent), iron and steel horsesuch as hammers, knives, taps, &c., made from worked this exhibit was by far the most interestquality of the material shown was made evident In the show case

Carbon Manganese

The company also showed an immense block of new bed lime ore, with pieces of polished teel made from pig iron produced from similar ore, and claim that owing to the superior chemical constitution of the iron from which they make all their steel, their rails possess superior merit. Putting aside all questions of strength and wear, the time must come when worn-out steel rails have to be utilized. If the steel in them is of a fitting quality, then they can be rolled directly into merchant sizes; or they will command a lighter price for Siemens-Martin purposes. The Albany and Rensselaer Company claim that their rails have this merit. Among their most prominent specialties we found steel rails and Walker's tempered, forged steel auils, from their greater stiffness, can be cut lighter than an iron nail, and at the same time possess more strength; they can be driven into barder wood, and are entirely free from Helder, the northernmost point of the province of North Holland, over fifty miles from Amsterdam. Why this route was chosen instead of the short cut now made is hard to understand. But provincial interests pr. valied over the plaims of the mercantile capital, and it was replaims of the mercantile capital, and it was repaired for our own days to bring Amsterdam by sarred for our own days to bring Amsterdam by

register prepared in which all new names are two 18 foot blast furnaces of the most approved we find samples with the steel calks welded on to be written as they may be reported from pattern and type, arranged with special refer- and then polished over the line of joinure, time to time, and before a revision of the printed list is needed we presume many of the firms the converter without remeiting, a practice company also had a very fine display in the main aisle of the Government Building, which have concluded to give the information needed. try, although used at many of the works in is to remain as a part of the Natural Museum This is in the form of a six-sided star at the base, with an hexagonal column resting upon furnaces. Opposite each name is the description of the stove, furnace or range to which it transfer the ingots from the converting works line square piece of steel, polished; (2d) a belongs, and the kind of fuel burned in it. to the heating furnaces, which is done without twisted rail, polished; (3d) a polished axle; (4th) two pieces of angle iron, polished; (5th) a rail; (6th) a turned axle. The edges of the hexagon are formed of crowbars, and on it are shown the first Bessemer axle made in the United States, and also the first Bessemer boiler plate, as well as steel worked into various forms such as were shown in the Main Build-

THE CLEVELAND ROLLING MILL COMPANY,

whose display was at T 60, Main Building, are

among the most extensive manufacturers of iron and steel in the country, owning their ore, mining their coal, having extensive blast furnaces, as well as iron and steel mills, comprising both Bessemer and Siemens-Martin plants We have already spoken of the latter, and shall mention their iron exhibit under its appropriate head. The Bessemer works of the Cleveland Rolling Mill Company were started in 1867. with a pair of five ton converters, but this number has since been doubled. The main product of their Bessemer works is, of course, rails, but this company have devoted considerable time and expended a large amount of money in developing other uses for Bessemer, with very good success, as their display showed. In connection with the rail part of their business they exhibited a three rail bloom 71/4 inches square, which has been cut at one end and broken at the other, showing a very good fracture. There are also three pieces of Besseiner rail, each ' feet long, taken from an ordinary lot of ralls without any selection, each twisted cold four omplete turns without causing a flaw or break of any kind in the metal. One of the most telling features of the display was a steel rail which was laid on the Lake Shore Railroad some six years ago, and was in constant service until taken up for exhibition. This rail has outworn 34 good iron rails, has been traversed by locomotives 766,500 times, by 6,387,500 cars and 143,080,000 tons weight. It would be hard to find a better illustration of the economy of Bessemer steel, or the vast results it will ac complish in cheapening transportation. In other forms of Bessemer they showed a very fine collection of wire, screws, horseshoes, points and heel points, steel tire, etc. The wire dopartment is represented by the contents of 15 ases, which contain every possible style, variety and quality of wire, drawn, square, oval, round, twisted, hollow and triangular, one case alone containing 60 different kinds, from the coarsest to the finest, some drawn to the diameter of a hair, and so pliable as to admit of being used as thread. Another case contained a pyramid five feet in hight, composed of coils of different sizes and qualities. One of the curiosities in this department was a long strand drawn into the shape of a carriage whip, seven eighths of an inch in diameter at the butt, and tapering to almost impalpable fineness. A bar of Bessemer horseshoe steel, grooved and prepared for cutting and forming, has 8 twists in its length of two feet, and shows no sign of flaw or weakness in any part. The steel screws exhibited by the Umon Steel Screw Company, which are practically the same as the Cleveland Rolling Mill Company, have attracted a good deal of attention.

The Philadelphia North American says: The Permanent Exhibition premises to be a grand success, the applications for room being already so numerous as to more than fill the Main Building, and that fact will give our readers an idea of what the exhibition will be. Many foreigners have applied for space, and it is believed that nearly all the countries represented at the Centennial Exposition will secure room in the Permanent Exhibition for the display of their goods. Those articles exhibited during the summer and fall will generally be removed, to be replaced by other and still better ones. fresh from the manufacturers and artists of this and the old world. The manager has recelved such an immense number of applications that he will be compelled to make sele tions from the mass of articles submitted, and by so doing those accepted will be of the best quality, and in numerous instances superior to those of the same character displayed at the recent Exposition. The directors design to improve the conveniences of the Main Building in every possible manner, especially in widening the passages and avenues, and introducing such other changes as may be deemed neces sary to facilitate the movements of large crowds and give visitors better opportunities to view the exhibits. The success of the Pe. manent Exhibition is assured beyond a doubt. and we have no fears but it will be conducted in such an enterprising and liberal spirit as to merit the support and well-wishes not only of Philadelphis, but of the country.

The combustion of iron in air is a chemical phenomenon now made comparatively easy to the experimenter. The most practicable method is to take a straight bar magnet of some power, and hammered iron and steel horseshoes. The and sprinkle iron filings on one of its poles. These filings arrange themselves in accordance with the lines of magnetic force, and, however closely they may appear to be placed, of course no two of the metallic filaments are parallel, and consequently a certain portion of air is in-closed as in a metallic sponge. The flame of any ordinary spirit lamp or gas burner readily iguites the finely divided iron, and it continues



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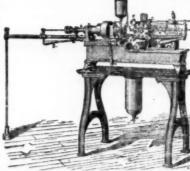
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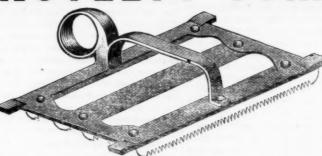
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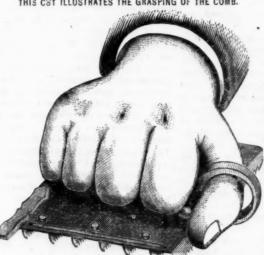
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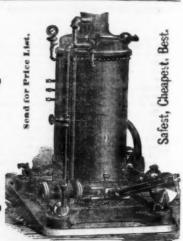
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FAC-SIMILES





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MILO PECK, New Haven, Conn.

New Patent Lever Screw Skate.

E. H. Barney, Springfield, Mass., and No. brand of skates the new pattern lever screw-skate, styled No. 6, which we illustrate in the companying cut. This skate can be used as ever clamp or screw clamp, or both. The manufacturer claims for it that it is the only elf-adjusting skate yet invented, working all the clamps together without the aid of a key. The chief advantage claimed for this skate is the ease with which it is applied to the boot, requiring only a few seconds to place it securely parts are independent, working without the tion of this skate are of the same high quality other mills now idle.

RHODE ISLAND.

Cottrell & Babcock, printing press manufac- worked. turers, at Westerly, resumed business Thurs-NEW YORK.

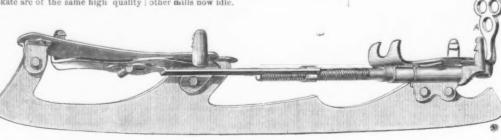
Little is doing at the iron works at Troy at present. Last week at Burden's mills, on the flats, a few furnaces were running and the horseshoe factory was in operation. All their to be filled with water, and in which the cinder other works were idle. At the Rensselaer Iron from the furnace is to be cast. When takea on, while the operation of removing the skate Works only the merchant mill was in operation, is accomplished in even less time. The and at the Albany Works the nail plate mill and to be of service to the Reading Railroad Comhorseshoe factory. The Star forge was to have pany, who will use it for ballast. aid of rivets or screws, and can be easily started up Monday. There are no indications taken apart and put together without the use at present of a resumption of work at the of tools. The materials used in the construc- Besserrer Steel Works, Rensselaer Works, or

visit Bridgeport again in the spring, with a view Delta says: It is authoritatively stated that of establishing a carpet factory. He will come the West Hamburg Iron Works will soon rebecause our tariff renders English competition sume operations. The works are owned by the 22 Chambers street, New York, successor to impossible. The same reason induced Thomp- Reading Railroad Company, but have been Barney & Berry, the well known skate mann-son & Co., of London, corset manufacturers, to leased by a Schuylkill county party, who will facturers, has added to the assortment of this open a branch in Bridgeport. mill at which the Henderson process was

turers, at Westerly, resumed business Thursday, having compromised with their creditors.

The employes of a portion of the works of the Pottstown Iron Company commenced work Monday, Nov. 27, at a reduction of 10 per cent, upon their wages

At the furnace of the Pottstown Iron Company a large tank is being placed in position, out again it is to be broken and crumbed so as



NEW PATENT LEVER SCREW SKATE

that has given to the brand of Barney & Berry ! an enviable reputation in the trade. Barney & Berry's skates were awarded the highest pre mium at the Vienna Exposition in 1873, and at the Centennial.

BUSINESS ITEMS.

MAINE

From the Belfast Republican Journal we learn that the buildings for Castle's Foundry and Machine Shop, now being erected by Mr. Castle on the site of his foundry that was destroyed in the great fire of 1873, are now nearly completed outwardly. They have a street front of 180 feet, with a depth of 120, are three stories in the rear and two in front. The casting room is 100 by 60 feet, and has smelting cupolas, one 24 and one 40 inches in diameter, and each 40 feet bigh, beside five crucible furnaces for brass work. The chimney is completed, is 92 feet high, 6 feet 6 inches square at the foundation, feet 9 inches at the top, and it will be surmounted by a cast iron cap. The engine, a very handsome one of 105 horse-power, is on the spot. There are three large ovens for cores for castings, one oven being 22 feet long, 10 feet wide and 10 feet high. A reservoir supply of water ample for all purposes has been so cured. A fine yard in the rear contains a half acre of land with the railroad track through it, and beyond that an excellent wharf privilege The machine shop will be supplied with an abundance of the best tools, adapted to any job of work in the machinery line. Beside the general work of such an establishment, the foundry and machine shop will make specialties of stone polishers, and a simple and serviceable steam pump of Mr. Castle's invention. This will be an important addition to the productive industries of the city.

MASSACHUSETTS.

The Valley Machine Company, of Easthampton, have just shipped to Mr. Emil Brugsch, Egypt, one of their steam pumps for his own use. Mr. Brugsch was chief Egyptian Commissioner at the Centennial, and secretary of the Board of Judges of Awards on Steam Pumps, Fire Engines and Hydraulic Machinery. The Valley Machine Company are quite right in regarding the order as a very considerable ompliment.

A local newspaper says: The Douglass Axe Company are working out their last order, but will probably receive others in time to continue operations.

The Florence Sewing Machine Company are receiving large foreign as well as domestic orders for their oil stoves, and will at once increase their production. The sewing machine ousiness is dull, however, and the company suspended work on that part of the sewing machine work of which they have a surplus on hand, on the 1st instant.

The Valve Works, Springfield, find business widely distributed. They are filling a Kentucky order for three 18 inch gas valves, a Peru (South America) order for 40 four inch, two-nozzled bydrants, and a Texan order for 40 more.

The managers of the Clinton Wire Cloth Works have recently completed one of the most extensive dry-houses for the drying of wire goods in this country. The building is of brick and granite, and 180 feet high and 36 feet 9th inst. square, which increases the capacity of the works 100 per cent.

CONNECTICUT.

The firm of Reynolds & Co., screw manufac turers, of New Haven, on Friday shipped five nolding machines to Watson, Gow & Co. Glasgow, Scotland. The Hart Manufacturing Company, of East

Berlin, have added to their main building, and built a small brick structure for Japanning pur-

The Norwich Pistol Company have been offered a contract to make 40,000 pistols.

P. T. Barnum is trying to induce English manufacturers to establish works in Bridgeport. The Hop. John Bright, writing to Mr. visited at Waldemere, writes that he intends to ing by Mr. Weimer.

Fuller, Warren & Co.'s Stove Works, Troy, ! were to have resumed operations last Monday.

NEW JERSEY. A placard is posted in the New Jersey Steel and Iron Works, Trenton, announcing that on and after December 1 a reduction of wages will take place. Laborers are to receive 90 cents

It is reported that the Central Railroad workhops, at Hampton Junction, are to be closed. The Laflin & Rand Powder Co.'s Works, at furnace is expected to be started. Rifton, in Ulster county, have received an order from Russia for 38,000 pounds of gunpowder.

PENNSYLVANIA. Partial resumption of work in the shops of cany, Reading, began on Monday last, and it is expected that in the course of a week or two nearly all the apprentices and about one-third of the journeymen will be at work again. There are about a dozen locomotives awaiting Company, for \$5000, at Sheriff's sale. repairs, and it is thought that as these go out of the shop others will be brought in to be overhauled.

A Fern Dale car wheel firm are to send a epresentative to Brazil about January 1st, to ook up trade.

Mr. William Downing, fire brick manufac urer, Allentown, has received an order for 200,000 bricks, from a company building a furace near Harrisburgh.

The Altoona Car Works have secured the quality of ore in that section. ontract from the Union Line Transportation Company to overhaul and repaint 1200 of the ompany's cars.

The Nimson Steam Forge and Axle Works, Allentown, were to start on Monday last.

The Altoona shops are to construct a num ber of locomotives for the Pennsylvania Railroad, to commence in January.

The steel department of the Cambria Iron

were made in 12 hours.

The nail factory of the Ætna Iron Works, Newcastle, is still running 12 hours a day. The rolling mill of Reis, Brown & Berger

Newcastle, still remains idle, with no prospect of speedy resumption. The Beaver Falls Cutlery Works, which have

only been running eight hours a day for some time, are now working 10 hours, which is a good ndication that business is improving. The brick work of the new brick extension

to the works of Seyfert, McManus & Co.,

Roland, Francis & Co., machinists, of Reading, had recently sent to them among a lot of put the Coyne nail picker on their nail maold iron from Oley, a wood stove, which is chines. probably 128 years old. A plate on the stove bears the date of 1748, with an inscription in German, above which was a well. The inscripburndale, has begun running, and calls its ton reads: "God supplies the well," and is in old text. The stove it is thought carre order. inally from across the ocean.

An exchange says: We are authoritatively informed that the Bechtelsville Iron Company mistakes. Gardner Bros. are the proprietors will put their new furnace into blast at an early of the Clay Retort, Fire Brick and Tile Works the last few days. If this design is carried out works and other manufacturing establishments; it will be gratifying news to Bechtelsville and gas retorts being a specialty. The firm of all who are in sympathy with the company. Gardner, Stuart & Co., proprietors of the The furnace will not be offered at sale on the Cumberland Fire Brick Works, manufacture

for the lining.

The Keel Ridge Furnace, Sharon, made 252 tons of gray iron the last week of November. It is proposed to utilize the waste gas by bringing it to the steam boilers at the rolling mill. At Sharpsville, Spearman Furnace No. 1 is in

blast. Cartersyille, Ga., for one of Mr. Weimer' Cen- run her small factory only. The bar and nail tennial blowing engines, of the same class as mill belonging to this establishment, owing to that furnished Mr. Grubb for his Mt. Hope Fur a number of orders in hand, will run steadily nace. The necessary boilers to supply the engine until January. The Riverside Blast Furnace, with steam are also included in the contract. which is now out for repairs, will be completed Barnum, declines to establish a carpet factory The second week of the run of the Mt. Hope by about the middle of December, and will there, because of our protective tariff. Another Furnace was 56 tons of No. 1 iron, nearly dou- probably be blown in early in January. The great English carpet manufacturer, who lately ble the product of the furnace before remodel

Evan Dampman, of near Barnestown, West Nantmeal, Chester county, has sunk a shaft on his farm in East Nantmeal to the depth of 33 feet, and at that depth has gone through 23 feet

Wallace & Sons, of Wormelsdorf, are running their plow factory on full time, and are turning out a large number of plows weekly.

Marietta's new hollow-ware works will soon start, employing at least 60 persons, and a new

The Cambria Iron Company, Johnstown, have just purchased the right to use Diehl's smoke consumer, and will at once put it in operation at their extensive works in that place. the Philadelphia and Reading Railroad Com- It is expected to save from \$10,000 to \$15,000 per year in the matter of fuel.

The Reading Railroad Company have purchased the Port Carbon Rolling Mill and Furnace, late the property of the Schnylkill Iron

The Warwick Iron Company is now engaged in sinking the shaft at the company's mines, at Boyertown, Berks county, 6 feet deeper than before, for the purpose of having a receptacle for the water running from the drift while heing pumped out. This will make this shaft 510 feet in depth. There are 24 hands employed in this mine, working in three gangs, eight hours each, who raise to the surface every day from 30 to 50 tons of ore, which is said to be the best

The Lehigh Zinc Company, at South Bethlehem, stopped work at their mines a short time since, and are now getting ores from the New Jersey Zinc Company (Sussex county, N. J.) at the rate of 12,000 tons per annum, on a contract which extends seven years from last autumn. The magnificent pumps of the company at the Freidensville mines have been immersed for the present by the flow of water, Works, Johnstown, made 1706 190-2240 tons of and the surface machinery has been stopped in ngot steel during the week ending November the best state of preservation. These two 18. The largest 24 hours' work was made on powerful companies-the New Jersey and the the 17th, amounting to 68 heats, of which 36 Lehigh-found it would be best for the interests of both that the New Jersey Zinc Company should mine the ore and the Lehigh Zinc Company manufacture it. According to the compact, the New Jersey Company cannot make any oxides for the American market, leaving the whole business in the hands of the Lebigh Company.

PITTSBURGH AND VICINITY.

The Dunbar Furnace Company are putting in place the large Robinson, Rea & Co.'s blowing engine, and the work in and around the furnace is being pushed rapidly forward. When fin-Reading, is nearly completed and ready for the ished, this will be one of the most complete furnaces in this country. Messrs. Jones & Laughlins are about to

Zug & Co. started their new nail factory on

Messes. Gardner Bros. and Gardner, Stuart & old text. The stove, it is thought, came orig- the fact that they are in the same line of business and occupy the office in the same building in Pittsburgh sometimes leads to Arrangements are being made to that at Lockport, Westmorland county, Pa., and effect. Fire has been kept in the furnace for have done a heavy business in retorts for gas the "Standard Savage" fire-brick, tile and No. 1 Valley Furnace, Sharon, is making 30 furnace blocks. Mr. Gardner of the first mentons a day of Bessemer pig. No. 2 is all ready tioned firm is also a member of the last, and the office of both firms is at 961/2 Fourth avenue, Pittsburgh.

Industrial affairs at Wheeling are said by an exchange to stand as follows: During the month of December the nail mills will be running on about half time. The LaBelle will not The Weimer Machine Works, Lebanon, have run this week, but will probably run for a short ontracted with Messrs. Ward & Guerard, of season before Christmas. The Riverside will Top Mill expects to run about half time until January, and then, like all the rest, its operations will depend upon the condition of trade. The Benwood Mill is rapidly approaching com pletion. It will be in running order about the 15th of December, and will be started up at

The Strange Creek Iron Co., with a capital of \$40,000, and \$35,000 paid in, have been incorpo rated. The object is the manufacture of pig iron. Principal office, Strange Creek, Braxton county. The largest shareholder is Marshal F.

The Riverside Mill is furnishing iron for the Bellaire and St. Clairsville narrow gauge

One of the Hardman furnaces in Preston county, known as the Glades Furnace, was sold Friday last to a Mr. Evans, of Philadelphia, for \$12,500.

Large quantities of West Virginia iron or are being shipped from Huntington to Wheel-

OHIO State Mine Inspector Roy estimates that the coal production of Ohio for 1876 will hardly reach 3,000,000 tons. The production in 1875 was 4,800,000 tons. None but the very best of mines in the State are running on full time, others on half time, and another class from four to five days per month.

The two Himrod furnaces now running are making about 100 tons per day, being a larger average of production than they ever made be-

Messrs. Diets, Harris & Morrison, of Ashtabula, and Mr. Cornell, of Youngstown, have undertaken the management of the Ashtabula

The Union and Ætna mills of the Union Iron Works Company, Cleveland, are running irregularly, half time, full, and occasionally overtime. They will probably average full time.

The Lake Shore rail mills, of the Cleveland Rolling Mill Company, have shut down for want of orders. This is somewhat unexpected as they have been running on full time since January 1st, and the 1st of the present month were turning out about 85 tons fluished iron

The manufacture of Watson's patent portable forge and blower, in which the Cleveland Steam Gauge Company have lately embarked, seems to be a success. Twelve forges per week are manufactured, and the company are three weeks behind with their orders, and orders booked to last until January 1st .- Trade Re

Messrs. Homer, Hamilton & Co., machinists and foundrymen, Youngstown, are making a mammoth hoisting tower for the Tuscarawas Iron and Coal Company, of Canal Dover. It will be of iron, 90 feet high.

Brown, Bonnell & Co.'s two furnaces, Youngstown, are in full blast, running on iron for their own mills. Their rolling mills are running on full time. They ship 8 car loads of finished iron daily. Their nail mill is running Orders in excess of supply on 12 hours time. - Vindicator, 24th.

The Portsmouth stove makers are busy. The Obio Stove Company have all the orders they can fill. H. Eberhardt & Co. are turning out stoves of all kinds, and shipping largely.

TENNESSEE. Messrs. Cahili & Whiteside, Chattanooga, have an addition to their foundry about com pleted which will nearly double its capacity. The rush of work has necessitated this exten

ILLINOIS

The North Chicago Rolling Mills have made contracts with different railroad corporations to manufacture large quantities of iron and steel equipments, to be delivered next year; so that the works will be run during the winter. Among the orders received is one from the Pittsburgh, Fort Wayne and Chicago Railroad for 4000 tons of steel rails.

KENTUCKY.

The Norton Iron Works, Ashland, are in operation. Only nails are made.

The sale of Boone Furnace, advertised for November 22d, to take place at Covington, was

postponed until March 28th. A break in the inwall of Hunnewell was discovered last week, and the furnace at once blown out. The extent of the break proved not very great, and the necessary repairs were so quickly executed that blast was put on on the 27th. When blown out she bad arrived at a working condition far in excess of any of he previous excellent yields. She had been averaging 20 tons for 10 days, which is the best put out on record in the Hanging Rock

region. Clear Creek Furnace, Bath county, blew out on the 16th, after a successful four months' blast, during which she made 450 tons of excel lent cold blast iron. Operations may b resumed next year, but nothing has been de-

GEORGIA.

cided as yet,

The new charcoal furnace of the Cherokee Iron Company, Cedartown, was completed in 1875, and has since stood idle. It will be put in blast about the 15th instant, and the company expect it will make a good showing for itself. Its capacity is 25 to 30 tons per day. It is blown by a Corliss frame engine, a cylinder 60 inches; steam cylinder, 2634 inches; stroke, 6 feet. The furnace occupies a very advantageous location. Beside having an abundant supply of timber and good ores convenient and in quantity sufficient for many years, the company have a pine tract of 600 acres of farming land under cultivation, producing wheat, corn, oats hay and vegetables sufficient to supply the wants of the company's resident employes at all seasons.

MICHIGAN. The Bay Furnace is in blast.

The M. and P. Rolling Mill Furnace is mak-

ing 1000 tons per month. The Munising Furnace will blow out shortly

probably for the winter.

MERICAN SCREW CO..

Providence, R. I.

Manufacturers of

IMPROVED Gimlet Pointed Wood Screws.

Patented

1876.



After forty years' experience we offer to the trade our Centennial Screw, patented May 30, 1876, as the best we have ever known.

The method of manufacturing is also patented, and we are changing our machiner, as fast as possible, to manufacture the improved article only. To introduce them, they will be sold at same price as the old style screw.

The new screws will be packed in manila colored boxes with new label covering end of box, and enlarged figures showing plainly contents.

To distinguish this screw we have adopted a trade mark, which is also secured to us. Section at Line A B Section at Line C D Section at Line C D Section at Line E F

The above drawings show the progress of screw-making from the old blunt point to style now adopted.

Experience has shown that the weak point of screws, as formerly made, is at the heel of the thread, where all the strains of forcing the screw into the wood naturally concentrale.

To avoid the sharp angle existing in the old style of screws has been the aim of all manufacturers, but every expedient hitherto adopted has proved as objectionable as the evil complained of.

It will be seen in our new screw that not only is the sharp angle avoided, but the strength very much increased, as illustrated above. See sections at lines.

CLAIM.

"A Pointed Wood Screw naving the outer periphery of the thread upon its body cylindrical, while a portion of the body below the thread and near the neck is conical, the remainder of the body to the point being cylindrical, and yet having all the thread brought to an edge of a constant angle, without jogs in the paths between the threads, substantially as described."

E. H. Knight's Improved Wrench.

The invention consists of a sliding bar carryng one of the jaws, and provided with a nut or stop, in combination with the handle, having a shoulder or stop, whereby a spring, engaging with the sliding bar, will press the jaw thereof toward the stationary

jaw, so that the jaws close automatically on the nut or other article to be grasped after they have turned the corners or angles of the latter. after which the jaws will be held by a lever, which engages with the sliding It also consists of a jaw, secured to a sliding oar, which is drawn in wardly by a spring, in ombination with a jaw which is fitted to said bar, and provided with an adjusting screw, whereby the jaw may be adjusted relatively to the thickness of the nut or article to be grasped, and the sliding bar will be engaged by the controlling lever always at the same shoulder or notch, regardless of the thickness of the nut or article. The handle may be formed of one piece or in sections, and its inner or upper end will be firmly connected to the stirrup or an attachment thereof.



The operation is as follows: The screw will be rotated so as to move the jaw, and adjusts the space between the two jaws relatively to the dimensions of the nut, boit-head or other article to be engaged and turned in a manner similar to a wrench of ordinary construction. The operator then grasps the handle and lever, so as to cause the lug to engage with the shoul-der of the tang, whereby the tang, and consequently the bar, will have no sliding motion, the jaw being thereby controlled. Then the wrench will be operated as an ordinary wrench. When the turn has been made the operator lets go the lever, whereby the tang is released and the jaw is no longer controlled, the spring forcing the lug from the shoulder of the tang. The wrench is then returned to its first position without previously removing the jaw from the nut or other article, as is usual in an ordinary wrench. When the jaws in the returning motion of the wrench reach the corners or angles of the article, they are not stopped thereby, for the spring will be overcome, and thus the jaw yields, so as to increase the space between the jaws, and the latter ride freely over the said corners or angles of the article, so as to assume positions on the next face of which they are to take hold. The spring now draws the jaw to its first adjusted or normal position. Then the operator grasps the handle and lever, whereby the lug and shoulder engages, and thus the jaw is again controlled, the tang of the bar being immovably held in the handle. Another turn of the wrench on the article may then be made, and the operation, being similar to that stated. will be continued until finished, it being noticed that in turning the nut or other article after a turn is made the wrench will not be removed from the article to take a fresh hold thereon. The manufacturer claims the following as new: "The sliding bar carrying the jaw, and provided with the nut or stop, in combination with the handle, having shoulder or stop, the inwardly-pressing spring, and controlling lever. The jaw, secured to the sliding bar, which is drawn inwardly by the spring, in combination with the jaw fitted to said bar, and provided with the adjusting screw."

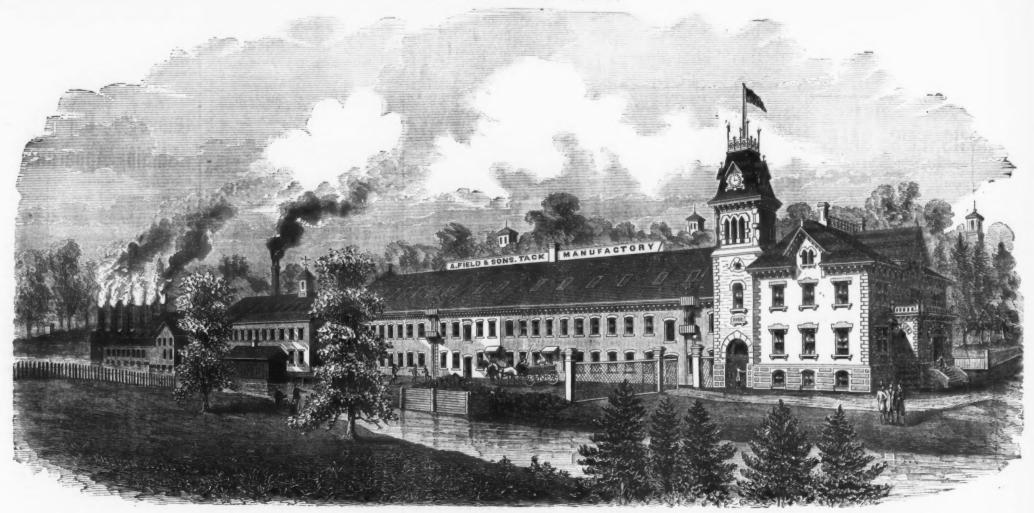
The above invention was patented in May, 1876, and the wrenches are now being manufactured and offered for sale by (the patentee) Mr. E. H. Knight, 1222 Chestnut street, Philadel-

Transfer of Canadian Merchandise in Bond.-The British minister has again called the attention of our government to the existing treasury regulations adopted in April, 1875, in relation to the transit of goods from Canada over our territory as not being in harmony with the Treaty of Washington. The particular ground of objection is that goods from Canada destined for transit through this country and exportation at seaboard ports, are not allowed to make the journey to the seaboard in cars sealed by the United States Consul in Canada, so as to avoid unloading and inspection at frontier ports of first arrival, although goods from Canada intended for consumption are allowed such privilege. After a. careful consideration of this subject the Secretary of the Treasury has decided that, under the treaty, transit goods are entitled to the same privileges of transportation, under the consular seal act of 1864, as other goods coming from Canada; they can proceed to the designated ports on the seaboard by continuous route, and that the discrimination beretofore practiced against transit goods will be discontinued. The Secretary has accordingly rescinded the regulations of recent date and restored those in force from the year 1864.

English iron manufacturers are complaining that American competitors are putting axle frames and pulleys into the Staffordshire mar-ket, and then they have already taken away the business of Birmingham manufacturers in Can-ada. This is not the worst of it, either.

The variety of new explosive compounds, with new and strange names, which almost weekly claim attention, is curious. In addition to Tonite we have now Liguose, made of wood fiber and nitro-glycerine, and Pantopollitt, a kind of dynamite with napthaline.

ESTABLISHED .1827.



ENTIRE LENGTH OF WORKS 700 FEET.

A. FIELD & SONS

TAUNTON, MASS.

Manufacturers of

IRON
COPPER
TINNED
SWEDES IRON
UPHOLSTERERS'
CARD CLOTHING
PAIL AND TUB
GIMP
LACE
PATENT COPPER PLATED
LARGE HEAD CARPET

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TRUNK
CLOUT
CHAIR
CIGAR BOX
HUNGARIAN
HOB
SILVERED OR JAPANNED LINING
SILVERED OR JAPANNED SADDLE
TUFTING
COPPER CUT

TACKS NAILS

BRADS AND PATENT BRADS.

LEATHERED CARPET
TINNED CARPET
COLORED COATED CARPET
COFFIN LINING
MINERS'
BRUSH
LOOKING GLASS
SHOE OR LASTING
ROUND HEAD
ROOFING
EVERY STYLE OF

BOAT REGULAR
BOAT CHISEL POINTED
FINE TWO PENNY
FINE THREE PENNY
PATENT COPPER PLATED
CHANNEL
AMERICAN IRON SHOE
SWEDES IRON SHOE
ZINC SHOE
STEEL SHOE
CHARCOAL IRON SHOE

With New, Improved, and Patented Machinery, we shall now make

GLAZIBRS' POINTS,

ONE OF OUR SPECIALTIES.

Any variation from the regular size or shape of the above named goods made from samples to order.

QUALITY GUARANTEED TO BE SATISFACTORY.

OFFICES AND FACTORIES. - - - - TAUNTON, MASS.

Warehouse and Salesroom at 78 Chambers Street, New York.

The King of Belgium is a very sensible sov ereign, with very correct ideas as to the means best calculated to promote the welfare of his subjects. He has offered for general compe tition among municipal or local authorities and private associations a gold cup valued at £5000, for such improvements in workmen's dwellings as shall at the lowest cost effect the greatest reduction in the death rate.

Special Notices.

ASSIGNEE'S SALE.

In the District Court of the United States for the Southern District of New York,

In the matter of Peter N. Burke and George W. McKee, Bankrupts.

In bankruptcy, No. 5516. Notice of sale.

The undersigned hereby gives notice of the at public auction on WEDNESDAY, THE 20th DAY OF DECEMBER, 1876, AT ONE O'CLOCK, IN THE AFTERNOON, THROUGH BURDETT & DENNIS, AUCTIONEERS, AT THE STORE, NO. 208 WATER STREET, IN THE CITY OF NEW YORK, formerly occupied by Burke & McKee, of the following described property, belonging to the estate in bankruptcy of said bankrupts, to wit: The stock on hand and undisposed of, consisting of STOVES, RANGES, HOLLOW-WARE, REPAIRS AND FITTINGS, in the line of goods heretofore dealt in by said firm; also, certain judgments, promissory notes, accounts, effects, debts and choses in action; ALSO, CERTAIN LETTERS PATENT OF THE UNITED STATES, FOR AN IMPROVED STOVE BRUSH, and a LOT OF STOVE BRUSHES ON HAND MADE UNDER THE SAME; together with the TOOLS, STORE FIXTURES and all other property in said store belonging to said bankrupts. Full particulars and catalogues can be obtained by

applying to the undersigned.

Dated, New YORK, November 21st, 1876.

A. H. FARRAR, Attorney for Assignee.
WILLIAM M. HOES, ee of said Bankrupts

No. 208 Water Street, New York City.

NOTICE.

The public are cautioned against constructing, selling or asing any Screw Machinery employing the in-ventions or improvements described in the following Letters Patent of the United States:

ing Letters Patent of the United States:
Letters Patent No. 42,763, for improvements in machinery for nicking the heads of wood screws granted to H. A. Harvey May 17th, 1864.
Letters Patent No. 42,766, for improvement in machinery for cutting thread upon wood and other screws, granted to H. A. Harvey May 17th, 1864.

AMERICAN SCREW CO.

MACHINERY,

New and Second-Hand. ENGINES:

32x72 in. Corliss Beam, 14x36 in. Woodruff & Beach Hor., 12x36 Green Cut-off, and six H. P. Haskings, all in perfect order. Prices low. PLANERS:

60 in.x12 ft., 42 in.x18 ft., 24 in.x6 ft., 22 in.x5 ft. Lathes, Milling Muchines, Drills and Presses.

ALLIS, BULLARD & CO. (Limited), 14 Dey Street, New York.

To Capitalists.

Wanted to sell, part interest in a valuable inven

tion connected with the railway interest,

For particulars address

Office of The Iron Age, 220 S. 4th St.,

Philadelphia.

TO FIRE BRICK MANUFACTURERS. Wanted a second-hand Furnace Block Brick Press, with or without the extra sized molds, to press from 12 to 20 inches in size. Address, with particulars, number of molds, sizes, price, &c.

ffice of The Iron Age, 220 S. 4th St., Philadelphia.

Beller, N., §180; new 5 inch Steam or gange for Steam or Water.

The inventors of this combined "Pressure Recording Gange" and "High Pressure Alarm" have, after many years of persistent effort and at great expense, succeeded in perfecting a reliable and accurate instrument for measuring either air, steam or water, when subjected to pressure, and for denoting the same by a tracing upon Edson's Patent Logs or "Charts." No manufacturit or steam user can afford to be without them. Adopted by the United States Centennial Commission for competitive test at the present Exposition, and has also been used by the American Institute for several years past as a standard gange. To be found at the Centennial Circulars sent on application to "M. B. EDSON, 91 Liberty Street, N. Y.

Agricultural Implements

hor. Boller, \$10.

Beller, N., §180; new 55 inch Steam Whistle, \$70; new 12 inch Steam Whistle, \$600; new 88 in. Steam Whistle, \$300; new 8 in. Steam Whistle, \$70; new 12 inch Steam Whistle, \$200; new 8 in. Steam Whistle, \$70; new 12 inch Steam Whistle, \$200; new 8 in. Steam Whistle, \$200; new 12 in. Steam Whistle, \$200; new \$12 in. Steam Whistle, \$200; new \$12 in. Steam Whistle, \$200; new \$12 in. Steam Whistle, \$200; new \$200; ne

VICTOR Corn Sheller, etc., etc. A. B. COHU, 197 Water Street,

"Everything for the Farm," containing fillus trations of 200 of most improved implements of Farm sent on receipt of icc.

Special Notice to the Hardware Trade.

EUREKA POST HOLE DIGGER. The best tool for the purpose ever invented. It took the Graad Prize at the Centennial over all competitors. Digs a hole of any size or shape in any kind of ground. Its length is five feet, weight nine pounds. Liberal discount to jubbers and for export. Send for circular.

EUREKA DIGGER CO.,
P. O. Box 37 15.

84 William St., N. Y.

P. O. Hox 51 ID.

A traveler of ten years' experience, well acquainted with the Eastern and Western Hardware and Saddlery Hardware Jobbers, wishes to make arrangement with manufacturer from Jan. 1st, either salary, commission or both. Satisfactory reference given. ommission, or both. Satisfactory reference given.
Address **TRAVELER,** Box 24,
Office of The Iron Age. 10 Warren St., N. Y.

Rolling Mill Proprietors

Having secured by patent a process to roll Nut Iron by which a large profit is left to the Rolling Mill and Consumers, any mill desiring to secure this specialty, address

Special Notices.

FOR SALE. Bargains Extraordinary.

New and Second-Hand Machinery For Sale, as follows:

The new Machines being marked (N), all others

MACHINE TOOLS.

The new Machines being marked (N), all others being second-hand.

MACHINE TOOLS.

PLANERS—22 ft.x45 in. square, \$1900; 16 it.x42 in. sq., \$250; 16 ft.x91 in. sq., \$900; 11 ft.x30 in. sq., \$590; 10 ft.x30 in. N., \$900; 8 ft.x27 in., \$350; 8 ft.x 26 in. N., \$700; 8 ft.x31 in., \$470; 6 ft.x24 in., \$390; 4 ft.x25 in. N., \$465; 43 ft.x14 in., \$190; 3 ft.x16 in., \$250; Crank Planer, 2 ft. bed, 14 in., \$190; 3 ft.x16 in., \$250; Crank Planer, 2 ft. bed, 14 in., \$190; 3 ft.x16 in., \$250; Crank Planer, 2 ft. bed, 14 in., \$190; 3 ft.x16 in., \$250; Crank Planer, 2 ft. bed, 14 in., \$190; 3 ft.x16 in., \$250; Crank Planer, 2 ft. bed, 14 in., \$190; 3 ft.x16 in., \$250; Crank Planer, 2 ft. bed, 14 in., \$190; and \$100; Machines.—Putnam Gear Cutter, cutting 48 in. in diam., \$360; New Haven Gear Cutter, cutting 48 in. in diam., \$360; New Haven Gear Cutter, cutting 48 in. in diam., \$360; New Haven Gear Cutter, \$200.

UPHRIPT DBILLS AND DRILL PRESSES.—52 in. Wormer & Whitney Upright Drill, \$200; Pond, No. 2 ft. 10 in., \$190; Upright Drill, N., \$360; Yond No. 1 Upright Drill, N., \$195; Upright Drill, Pond's, 29 in., \$100; 3 - 21 in. Upright Drills, 24 in., Pond's, each \$55; 5 ft. bed, by 18 in. swing, \$75; 5 ft.x14 in., \$60; 6 ft.x14 in., \$65; 5 ft. bed, by 18 in. swing, \$75; 5 ft.x14 in., \$60; 6 ft.x14 in., \$65; 5 ft. bed, by 18 in. swing, \$75; 5 ft.x14 in., \$60; 6 ft.x14 in., \$65; 5 ft. bed, by 18 in. swing, \$75; 5 ft.x14 in., \$60; 6 ft.x14 in., \$65; 5 ft. bed, \$60; 6 ft.x14 in., \$65; 5 ft. bed, \$60; 6 ft.x15 in., \$60; 6 ft.x15 in., \$60; 6 ft.x26 in. \$60; 6 ft.x26 in., \$60

PORTABLE AND STATIONARY EN-GINES AND BOILERS.

In. 3 jawed Chuck, N., \$44.

PORTABLE AND STATIONARY ENGINES AND BOILERS.

300 h. p. 2 cylinder vertical Engine, 22x36, \$3200; 2 stationary, borizontal Engines, cylinder 22x30, esch 150 h. p., N., each, \$2800; 150 h. p. sta. hor. Engine, 18x48, N., \$2425; 80 h. p. sta. hor. Engine, 18x48, \$1500; 75 h. p. sta. hor. Engine, 18x48, \$1500; 75 h. p. sta. hor. Engine, 18x36, \$1600; 50 h. p. sta. hor. Engine, 14x36, \$1600; 50 h. p. sta. hor. Engine, 14x36, \$1600; 50 h. p. sta. hor. Engine, 14x30, \$1000; 50 h. p. sta. hor. Engine, 18x36, \$1000; 150 h. p. Corlass sta. hor. Engine, 18x36, \$1000; 150 h. p. Corlass sta. hor. Engine, 16x36, \$1000; 150 h. p. Corlass sta. hor. Engine, 16x36, \$1000; 150 h. p. Corlass sta. hor. Engine, 16x36, \$1000; 150 h. p. Corlass sta. hor. Engine, 16x36, \$1000; 150 h. p. Corlass sta. hor. Engine, 16x36, \$1000; 150 h. p. Corlass sta. hor. Engine, 16x36, \$1000; 150 h. p. Corlass sta. hor. Engine, 16x36, \$1000; 50 h. p. ta. hor. Engine, 16x36, \$1000; 50 h. p. Upright Engine, 20x48, \$2700; 50 h. p. Upright Engine, 20x48, \$2700; 50 h. p. Upright Engine, 12x18, \$1200; 35 h. p. Headley Portable Engine, 12x18, \$1250; 35 h. p. sta. hor. Engine, 12x34, \$625; 30 h. p. Portable Engine, 12x18, \$1200; 35 h. p. sta. hor. Engine, 12x34, \$400; 30 h. p. Portable Engine, 12x18, \$1200; 35 h. p. sta. hor. Engine, 12x48, \$1200; 30 h. p. Portable Engine, 10x18, \$950; 25 h. p. Portable Engine, 10x18, \$950; 25 h. p. Portable Engine, 10x18, \$950; 25 h. p. Portable Engine, 10x18, \$950; 25 h. p. Portable Engine, 10x18, \$950; 25 h. p. Portable Engine, \$900; 20 h. p. Upright Boiler, \$250; 18 h. p. Engine, \$900; 20 h. p. Upright Boiler, \$950; 1

and the trade; largest stock always on to ship at notice. Manufacturer of to ship at notice. Manufacturer of the stock of the corn sheller, etc., etc.

B. COHU, 197 Water Street, thing for the Farm," containing fillar 300 of most improved implements of Farm, sipt of itc.

Notice to the Hardware Trade, tool for the purpose ever invented. It mad Prize at the Centennial over all combigs a hole of any size or shape in any kind lits length is five feet, weight nine pounds, count to jobbers and for export. Send for x 3715. St William St., N. Y. er of ten years' experience, well acquainted lastern and Western Hardware and Sadware Jobbers, wishes to make arrange-manufacturer from Jan. ist, either salary, no, or both. Satisfactory reference given. Of The Iron Age. 10 Warren St., N. Y. of The Iron Age. 10 Warren St., N. Y. TO MILL Propriet to Secured by patent a process to roll Nut which a large profit is left to the Rolling donsumers, any mill desiring to secure this address

H. JOHNSON,

Haveerstraw, Rockland Co., N. Y.

Pulleys and all Tools, \$1825.

MACHINERY.

Exceisior Machine, N., \$275; 25 ft. circular Saw Mill, to avail Belling, with draw-in Rigging, \$250; Brown Frost Log Dog, \$22; 112 ft. \$\forall in. beavy log chain with sheave, per lb. 4\forallectric to the Hardware Irade.

Exceisior Machine, N., \$275; 25 ft. circular Saw Mill, to avail Belling, with the saw ylog chain with sheave, per lb. 4\forallectric to the Saw Mill, to avail Belling, with draw-in Rigging, \$250; Brown Frost Log Dog, \$22; 112 ft. \$\forallectric to go base and the works, Carriage, Saw and boiling, with draw-in Rigging, \$250; Brown Frost Log Dog, \$22; 112 ft. \$\forallectric to go base and the saw Mill, to avail Belling, with draw-in Rigging, \$250; Brown Frost Log Dog, \$22; 112 ft. \$\forallectric to go base and the saw Mill, to avail Belling, with draw-in Rigging, \$250; p. and down Saw Mill, to avail Belling, with draw-in Rigging, \$250; p. and down Saw Mill, to avail Belling, with draw-in Rigging, \$250; p. and down Saw Mill, to avail \$10;

and Shaping Machine, R. Ball & Co. make, \$45; Andrews' Box Board Sawn; g Machine, 42 in. saw, \$420; Box Board Matching, Machine and Edger, \$70; Swing Saw, \$15; Box Board Matcher, N., \$65; Large Lot Stave Sawing, Planing, Jointing and Working Machinery for tight barrel work, full particulars upon application; fron Frame Blanchard Spoke, Pick, hammer or other handle Lathe, \$240; Richardson, Meriam & Co., Axe Haudle and Spoke Lathe, \$140; Iron Frame Spoke Tenoner, \$45; Cylinder Stave Sawing Machine, saw 11x18, \$70; Cylinder Stave Sawing Machine for kits, saw 11x18, \$75; Wheeler, Mehck & Co., single Horse-Power, with Wood Sawing Attachments, \$165; Gray & Sons' single Horse-Power, \$100; Upright Shaper or Irregular Moider, wood frame, \$65; 3 slde Monitor Moider, Russ' patent, R. Ball & Co. make, works 14x7, N., \$500; 4 side Monitor Moider, Russ' patent, R. Ball & Co. make, works 14x7, N., \$200; No. 2 Houston Moider, \$25; large size Iron Frame Moider, R. Ball & Co., 3 side, N., \$225; No. 2 Rogers & Co. Moider, 3 side, \$25; large size Iron Frame Moider, R. Ball & Co., 3 side, N., \$300; 3 side, N., \$300; Saide Smith Moider, 5, \$25, No. 4 Side Sam Moider, Ball & Co., N., \$40; Sas Moider Ball & Co., N., \$40; Sas Moider, Ball & Co., N., \$40; Sas Moider Ball & Co., N., \$80; Iron Frame Bani Saw, N., \$80; 2 Jig Saws, each \$30; Squaring and Mitering Saw Table, \$38; 4 Wood Frame Tenoner, \$38; No. 2 Smith Power Mortiser, \$150; Foot-Power Mortiser, \$18; Horizontal Car Boring Machine, Ball & Co., N., \$80; 2 Jig Saws, each \$30; Squaring and Mitering Saw Table, \$38; 4 Wood Frame Saw Benches at \$30, \$86, \$21 and \$18; Roirzontal Car Boring Machine, \$412; Rollstone Scroll Sawing, Boring and Planing Machine, N., \$40; Baldwin Wood Lathe, holow anger style, 2 revolving disks carrying cutters, \$175; 20 ft. bed by 17 in. swing Pattern Maker's Lathe, with large assortment tools, \$110; 24 in. Wood Turning Lathe, N.,

GRIST MILL MACHINERY.

GRIST MILL MACHINERY.

36 in. Holmes & Blanchard Portable Grist Mill, geared, with hoisting bale and screw, \$325; two 36 in. Holmes & Blanchard Portable Grist Mills, geared, each \$275; 26 in. Holmes & Blanchard Portable Grist Mill, geared, \$175; 30 in. Harrison Portable Grist Mill, \$230; 20 in. Harrison Portable Grist Mill, N., \$160; 20 in. Harrison Portable Grist Mill, N., \$250; 12 in. Harrison Hand Mill, N., \$75; Holmes & Blanchard Corn and Cob Cracker, \$50; R:n Corn or Feed Stones, 4½ ft. diam., with curb hopper, hopper frame and elevator, \$68.

COTTON, WOOLEN AND WASTE MACHINERY, SEWING MACHINES, &c. CHINERY, SEWING MACHINES, &c. Complete outfit for a Waste Mill, including 24 in. Water Wheel, 6 h. p. boiler. &c., \$650 (fall particulars on application); Fleecing Machine, \$130; Extractor. \$90; Thresher, \$40; Waste Wheel, \$25; 2 large Waste Boxes, 4½ fl.x34 in.x30 in., each \$6; Small Crane or Lifting Machine, \$10; No. 1 Card (double), Cyl. \$6 in.x24 in., \$125; No. 2 Card (double), Cyl. \$4 in., \$100; No. 3 Card (double), Cyl. \$4 in., \$100; No. 2 Card (double), Cyl. \$4 in., \$100; Special Card (double), Cyl. \$1 in., \$100; No. 2 Card (double), Cyl. \$1 in., \$100; No. 2 Card (double), Cyl. \$4 in., \$100; 1 in., \$100; No. 2 Card (double), Cyl. \$4 in., \$100; 1 in., \$100; No. 2 Card (double), Cyl. \$3 in., and Bar. \$6 ft., \$8; 6 Finisher Cards, with rub roll, feed aprons, workers and strippers, each \$150; Gill Machine and Bailer, N., \$60; Cloth Sewing Machine, N., \$90; 3 Pepper Leggers, \$100 cach; 3 Aiken Leggers, \$125 each; 3 Aiken Footers, \$75 cach; 4 Pepper Footers, each 40.

BLOWERS AND FANS.

No. 7 Sturtevant Blower and Hot Blast Apparatus \$400. FIRE ENGINES, STEAM PUMPS, &c.

FIRE ENGINES, STEAM PUMPS, &c.
First Class Amoskeag Steam Fire Engine Rotary
Pump, \$1200; 2 Hand Fire Engines (Hunneman,
with & Hose Carriages for same, \$425 cach: New
Hand Fire Engine and Hose Carriage, \$350; American Portable Fire Extinguishers, \$18 cach; No. 7
Sutherland Steam Pump, \$190; Rotary Fire Pump,
N., \$125; Baiance Wheel Steam Pump, \$275; 2 Supply Pumps, Corlies, each \$125; size B Bake Pump,
\$20; 2 No. 1 Knowles Pump, N., \$165; No. 2 Wright
Pump, N., \$165; 2 No. 2 Know es Pumps. each \$150;
No. 2 Knowles Boller Feed Pump, \$150; 2 No. 1
Knowles Pumps, \$90 and \$95; No. 0 Wright Bucket
Planger Pump, N., \$85; almost new Steam Derrick. 65 ft. mast, 52 ft. boom, \$550; 2—900 gall. Copper Kettles, each \$300; 425 gall. Copper Kettles, each \$300; 425 gall. Copper Kettles, each \$300; 425 gall. Cop-

WATER WHEELS,

All complete with Shafting, Couplings, Gears, Boxes, &c. 5ft. Blake Wheel, \$375; 5ft. Whitney Wheel, \$255; 2ft. Wheel, \$130; Cottrell & Babcock Water Wheel Regulator, good as 1 ew, \$75; 2-27 in. Water Wheels, each \$75. HAY PRESSES.

No. X, P. K. Dederick Perpetual Hay Baling Press \$300; No. 2 Ingersoll & Dougherty Hay Baling Press \$75.

CIRCULAR SAWS

WANTED.—A first-class business man familiar with machinery and manufacturing, capable of handling large bodies of men, desires a responsible position. References satisfactory. Address,

IRON AND STEEL Care of P. O. Box 813, Bridgeport, Conn.

CONSUMES THE BLACK SMOKE.

Saves Coal, Saves Waste of Iron, and Consequently Saves Money.

Gilmore's Improved Double Grate Reverberatory Furnace

For Puddling, Boiling, Bushelling or Reheating Iron. Its thorough efficiency apparent on examina-tion, and two years' practical test proves it will do all that is claimed for it. Adds but little to first cost, or may be applied to old fur naces, and any furnaceman can work it without special instruction.

No prudent forge or mill management can afford to be without it. Royalty, \$100 for each furnace per annum, or one tenth of actual savings, as may be preferred by the user. Address

H. H. GILMORE, Patentee, Supt. Boston Rolling Mills, Cambridgeport, Mass. Special Notices.

TO LET.

A Light, Handsome Office.

Possession Immediately. HERMANN BOKER & CO., 161 Duane Street. N. Y.

ROLLING MILLS.

A first-class Rolling Mill Superintendent will be pen for an engagement about January next, Thorough on rolling mill construction. Does not

Address Office of The Iron Age, Pittsburgh, Pa

NOTICE! POND'S TOOLS.

The undersigned has assumed the Personal Property, including accounts, finished and unfinished Machinery, good will &c., connected with the manufacture of Machinist's Tools as conducted by Mr. Lucius W. Pond since 1847, and will continue the said business at the old stand, cor of one and Exchange Sts. Worester, Mass. under the name of David W. Pond, Successor to Lucius W. Pond. CARD.—Having assumed the business meationed above, I solicit Inquiry and Patronage, with guarantee that present standard of Workmanship, and quality of Machinery shall be maintained. A large quantity of New and Second-Hand Tools, ALL. STYLES AND SIZES, For Sale at Low Prices. Send for list of second-hand tools Store at 98 Liberty St., New York, will be discontinued from Feb. 1, 1876, and all sales made from manufactory. Respectfully, DAVID W. POND,
Successor to Lucius W. Pond. Respectfully,

DISCOUNT LISTS.

VENTILATING & STEAM HEATING.

A thoroughly competent engineer, with extensive experience in the above line, desires employment. Address Office of The Iron Age, 10 Warren St., N. Y

MANUFACTURERS

esirous of introducing their goods to the British and Continental Markets, are advised to insert advertisements in the newspaper "IRON," pub lished every Saturday, at 99 Cannon Street, London, E. C.

SCALE: First 3 lines, 3/; every additional line, 10d. Price, 6d. per Copy, or 30, per annum, inclusive of postage to the United States.

American Manufactures in England.

A merchant of long experience in Birmingham England, will devote time to the sale of, and to the procuring of orders in the English market for Ameri-can manufactures. For particulars apply to the Office of *The Iron Age*, 10 Warren St., N. Y.

SPECIAL NOTICE MEN'S SINGLE GUNS.

addition to the former line of A. Simon's, Liege, SILESIAN SHEET ZINC,

LOUIS WINDMULLER & ROELKER,

Steel Castings.

CHESTER STEEL CASTINGS CO.,

Wanted—A Partner.

In a foundry and machine business, already well established. Locality splendid and healthy. A practical man with means is wanted to join practical man who is already well established CAR WHEEL FOUNDRY, P. O Fox 134, Selma. Alabama

SPECIAL NOTICE.

I have three patents for Dies, Machinery and Tools for making Angers and Bits, each running seventeen years; dated as follows: Dec. 19, 1865; January 31, 1866, There is a special cisim on each of the dies. All persons infringing on said patents will be held responsible to the extent of the law. Russell Jennings.

DEEP RIVER, Conn., Sept. 7, 1874.

A. PURVES & SON, Corner South & Penn Streets, Phila., Dealers in

Scrap Iron & Metals, Machinery, Tools Shafting & Pulleys, Steam Engines, Pumps & Boilers, Copper, Brass, Tin, Babbit Metals, Foundry Facings. Best Quality Ingot Brass.

Important to Manufacturers. BISSELL, WELLES & MILLET,

Auctioneers and Commission Merchants, No.

15 Murray St., New York,
Selicit from Manufacturers and o.hers consignments of Hardware and Cutlery for our weekly
Auction Sales to the Trade, or at private sale for
cash, as desired. Our facilities for moving large lines
of goods are unsurpassed. Advances made if desired.

Wanted, Light T Rail.

Parties having for sale 50 to 100 tons of slightly scorn, 25 to 35 lbs. T Rail, can find a purchaser at a reasonable price, by addressing (with price delivered in New York or Philadelphia.)

W. & A. C. SEMPLE, (Manufacturers' Agents.)

D. G. AMBLER, Utles, N. V.

RAILWAY SUPPLIES, METALS, &c. 44 Third St., LOUISVILLE, KY. We solicit the business of manufacturers who are estrous of being represented in this market.

TO MANUFACTURERS.

An American of business experience, baving traveled in foreign countries, understanding two languages and already in correspondence with a number of hardware houses abroad, would like an engagement with any house wishing to open an export trade. Address, E. L.,
Office of The Iron Age, 10 Warren St., N. Y.

Special Notices.

DROP FORGINGS.

The TRENTON VISE & TOOL WORKS, Trenton, N. J., having increased their facilities, are now able to do all kinds of

Iron and Steel Drop Forgings n quantities to order at reasonable rates

HERMANN BOKER & CO, Proprietors, 101 & 103 Duane St., N. Y.

Ramsey's Car Truck Shifting Apparatus,

The advantages gained by using Ramsey's Car ruck Shifting Apparatus, are as follows :

1st.—The power required to run a car on the level rack is sufficient to separate the trucks from a car

track is sufficient to separate the trucks from a car body.

3d.—It avoids twisting or straining the car frames.

3d.—The manufacturing cost of this Shifting Apparatus will not exceed one hundred dollars. And each one is capable of doing more work with less strain to the car, and without the assistance of an extra Steam Engine, than a Steam Hoist, costing twelve thousand dollars.

At each one of the principal stations where car wheels are regularly tested to see how they stand the journey, a switch is placed, having a depression or pit about eighteen inches deep, with gentle inclines at each end, and on cach side a narrow track, remaining on the level, upon which is small but strong trucks, designed to earry supporting beams or cross-bars extending from one to the other across the pit, for the purpose of bearing the car body, while the tracks run down the incline ralis to the pit.

A Working Model of this Apparatus is on exhibi-tion at

220 S. Fourth Street, Philadelphia, Pa. Communications may be addressed to

RAMSEY & SCARLETT, as above, or to Box 162, Cobourg, Ontario, Canads. See The Iron Age of Sept. 7, 1876.

Briesen's Patent Agency

FOR SECURING INVENTIONS, TRADE MARKS, &c., IN AMERICA AND LUROPE.

No. 258 Broadway, New York. A. V. BRIESEN.

Second-Hand & New Machine Tools.

Three 21 inch swing "Pond" Drills. Three 4 Spindle Drills. One 5 ft. Radial Drill. One 2 Spindle Profiling Machine. Three Common Milling Machine. One No. 3 Smith & Garvin Milling Machine. One No. 4 Smith & Garvin Milling Machine. One Brown & Sharpe Universal Milling Machine. One Brown & Sharpe Universal Milling Machine. One Crank Planer. One 2000 lb. Ferris & Miles 8 team Hammer. Two 32 in. swing 15 ft. bed Lathes. One 20 in. swing 10 ft. bed Lathe. Four 20 in. swing 8 ft. bed Lathe. One 25x36x6 ft. Planer. One Die Sinking Machine. One 24x24x5 ft. Plauer. One 21 in. swing 8 ft. bed Lathe. One 15 in. swing 6 ft. bed Lathe. The above tools have been little used, will be sold very low and can be seen at the store of GKORGE PLACE.

GEORGE PLACE,
131 Chambers and 103 Reade Sts., N. Y.

The Champion Corrugated Ash Can. ASHES, WASTE, OR GARBAGE.

THE CORRUGATED METAL CO., East Berlin, Conn.

for Sale, &c.

For Sale or Rent. The three story Brick Factory and out buildings lately occupied by the Middletown Shirt Company. Steam Engine and Machinery ready for immediate

ise. Call on or write to JOSEPH W. ALSOP, JR. or JAS. G. BALDWIN, Real Estate Agent. Middletown, Conn., Sept. 11th, 1876.

MACHINE SHOP AND FOUNDRY. Well located for Iron, Coal and Transportation Main building adapted to any manufacturing business. Low price and liberal terms. Address

Office of The Iron Age, 10 Warren St., N. Y.

Hardware Business For Sale.

An old-established stand in a good town of 7000 inhabitants in southern Pennsylvania. But two stores in place. For particulars address Office of The Iron Age, 10 Warren St., N. Y

HARDWARE, STOVE AND TIN STORE

SACRAMENTO, CAL., For Sale.

A rare opportunity to buy a well established busi-ess at a bargain. Apply to HOLBROOK, MERRILL & CO., 113 California St., San Francisco, CAL.

Or 218 Water St., N. Y. MACHINERY &c., FOR SALE.

Having sold our good will and business to the Domestic Sewing Machine Co., we have for sale a larree quantity of SECOND-HAND MACHINERY, a stock of sheet brass, sheet and bar steel, wire, &c., at low prices, at our manufactory, corner of Waitham and Washington Streets, Boston. GROVER & BAKER SEWING MA-CHINE CO.

FOUNDRY

For Sale or To Let. The old established Foundry, 16 and 18 DeWitt treet, with or without fixtures. Inquire of JOHN RODGERS (at Machine Wo: ks),

For Sale. A No. 5 Geared Stiles & Parker Press. Perfect order. Quite new. Latest pattern.

B. D. WASHBURN & CO., Boston.

29 & 24 De Witt St., Albany, N. Y.

Trade Report.

Office of The Iron Age. Wednesday Evening, Dec. 6, 1876.

The financial markets have been generally devoid of interest during the past week, and no healthy activity is expected until the uncertainty respecting the issue of the national canvass is set at rest. The President's message is to so great an extent a negative document that it has had no influence on "the street." The accompanying public documents have attracted but little attention, although Mr. Secretary Morrill's report is generally regarded as a sensible document, expressing sound financial

The local money market has stiffened some what, owing to the continued drafts of the Hardware the same conditions exist. West and South for currency to move the pork and cotton crops. Rates to borrowers on call have advanced to 5 @ 7 per cent.

In the gold market 1081 and 109 have been the limits of the premium fluctuation. The market is otherwise without feature of general interest. We give below the highest and lowest daily quotations in this market:

	Highest.	Lowes
Thursday		-
Friday		108
Baturday	108%	108
Monday		1083
Tuesday		1081
Wednesday	10834	108
To the hond moulest		1

In the bond market governments have shown a tendency to strengthen, which is gratifying as indicating an abiding popular faith in the stability of our national credit and a belief that as indicating an abiding popular faith in the stability of our national credit and a belief that our present political troubles will reach a peaceful and satisfactory settlement, which the country will loyally accept; and that whichever of the two aspirants is inaugurated will be supported by the people until he shall have forfeited their confidence. If any real danger menaced the country, or if there were any substantial basis for the sensational predictions of the political newspaper press, the most sensitive barometer of the situation would be found in the government bond market. We give below the quotations of U. S. securities at the close of business to-day. State bonds have been dull; railway mortgages are in regular and weak.

The stock market has been heavy, and the tendency of prices has been downward. The principal speculative dealings have been in Lake Shore, D., L. & W., Westerr. Union, St. Paul, New Jersey Central and Michigan Central. We give below the quotations of active shares at the close of business to-day.

The bank statement shows a reduction of \$2,886,700 in legal tenders, from the cause already noted. In other respects the changes are unimportant, as will be seen from a comparison of the aggregate averages for two weeks:

Nov. 25. Dec. 2. Differences.
Loans. ... \$257.487.703 \$256,589,700 Dec. \$2886,000
Specie. ... 20,084.500 20,484.100 Inc. 399,690
Legal tend's. 42,210,400 39,823,700 Dec. 2,356,700
Deposits. ... 299,392,400 207,322,000 Dec. 2,356,700,400
Circulation. 15,012,300 14,832,500 Dec. 179,900 The foreign trade movements for the week are shown in the following tables:

IMPORTS For the week ended Dec. 2: 1874. 1875. 1876. Total for week.. \$5.517,736 \$8,447,126 \$3,401,541 Prev. reported.. 359,628,792 298,007,116 253,409,347 Since Jan. 1....\$365,146,528 \$306,454,242 \$261,810,889 Among the imports of general merchandise

were articles valued as follows:		
Anvils	Quant.	Value. \$1,463
Brass goods		2,380
Bronzes	49	8,401
Chains and anchors	R.E.	2,331
Copper	00	58
Cutlery		11,743
Gas fixtures	1	939
Guns		9,966
Hardware		357
Iron, pig, tons	556	15,083
Iron, sheet, tons	0	998
Iron cotton ties	197	577
Iron. other, tons	RQ	1,217
Lead, pigs	1 333	7,779
Meral goods	197	17,314
Nails		924
Needles.	99	10.077
Old metal		1,270
Per. caps	90	2,932
Saddlery		1,880
Steel	1 0.19	18,633
Tin, boxes	19.461	98,752
Wire		9,471
		3,461
EXPORTS, EXCLUSIVE OF S	PECIE.	
For the woods anded Dag K.		

For the week ended Dec. 5: Total for week. \$4,103,914 \$5,160,801 \$6,934,616 Prev. reported... \$65,218,046 \$23,779,481 \$247,656,508 Since Jan 1....\$269,321,960 \$238,940,232 \$254,591,124 EXPORTS OF SPECIE. For the week ended Dec. 2:

201 100	
Total for the week	.\$260,110 (2,537,213
Total since Jan. 1, 1876	12,537,823
Same time in 1875	9,450,102
Same time in 1874	50.844 201
Same time in 1873	6.612 096
	7,561,700
Government bonds close as follows:	***********
Bid.	Asked
U. S. Currency 6s	121 %
U. S. 6s 1861, reg 112%	113
U. S. 6s. 1861, cou	116%
U. S. 6's. 1865, reg109	1091
U. S. 6's. 1865, cou 109	109%
U. S. 6's, 1865, new reg	109%
U. S. 6's. 1865, con	11236
U. S. 6's. 1867, reg	1123
U. S. 6's. 1867, con	115%
U. S. 6's. 1868, reg11234	11334
U. S. 6's. 1868, con	116%
U. S. 10-40 reg112%	113
U. S. 10-40 cou	118%
U. S. 5s. 1881, reg	11136
U. S. 5s, 1881, cou	11134

U. S. 41/2 per cents 1091/2	109%
The following were the closing quots active shares:	tions of
At antic and Pacific Telegraph 15 Chicago & Northwestern 36 Pref	Asked. - 15% 36% 59%
Chicago, Rock Island and Pacific 993	100

U. S. Dr. 1881. COU	111
U. S. 41/2 per cents	109
The following were the closing quota	tions
active shares :	I DECIMAL
Bid.	4 -1
At antic and Pacific Telegraph 15	Aske
Chicago & Northwestern 86	- 15
Pref 59%	36
Chinage Book forest and Books	59
Chicago, Rock Island and Pacific 993	100
Chic., Bur. & Quincy	113
Col., Chic. & Ind. Cent 3%	8
Clev , Col., Cin. and Indpls 36	38
Cleveland and Pittsburgh 88%	89
Chicago & Alton	99
" Preferred 108	_
Consolidation Coal 32	36
Canton 26	80
Del., Lack, and Western 70%	70
Delaware & Hudson Canal 6934	70
Adams Express 105	106
American Express 60%	61
United States Express 55%	56
Wells, Fargo & Co. Express 89	90
Erie 914	9
Harlem 138	139
Hannibal & St. Joseph 124	18
" Pref 2534	26
Illinois Central	69
Kansas Pacific 9	
Kansas & Texas 7	8
Lake Shore 55%	55
Michigan Central	48

Morris & Essex 95	1
Milwaukee & St. Paul 19	350
	23%
Maningan	
Mariposa	15%
	5
New York Central 10:	136
New Jersey Central 33	33%
	536
" Preferred 10	
	136
Panama	-
Pittsburgh & Fort Wayne10	1
	3
Quicksflyer.	
Pref	
St. L., Kan, City Northern	5
	636
	636
Union Pacific	
Union Pacine	
Western Union Telegraph 73	E

GENERAL HARDWARE.

The demand for domestic Hardware of every description continues dull. Very few trav elers are out, and letter orders, as is usual so near the close of the year, are limited to the actual necessities of the moment. In Foreign

The demand for Nails is light, and prices continue firm at previous figures, viz., 10d. to 60d., \$3 per keg, net; orders of 100 kegs and over are subject to a discount of 10 cents per

Darling, Brown & Sharpe, Providence, R. I., illustrate in their advertisement on the 9th page their English Standard Wire Gauges. They quote these goods at discount 25 per cent. from their list, which will be mailed on application.

From the following circular it will be seen that the Biddle Hardware Company quote American Screw Co.'s Flat Head Iron Wood Screws at discount 60 per cent. The price for these goods in this market continues firm at unchanged figures.

Office of the Biddle Hardware Co.—
PHILADELPHIA AGENTS FOR AMERICAN
SCREW CO.'S SCREWS.

We solicit orders for the above make of Screws at the following prices, subject to charge without activities. change without notice Prices not guaranteed. Terms net cash 30

Flat Head Iron Wood Screws. dis. 60 % 15 inch \$5.00 17 inch. Brass " .52½ % 16 " .6.25 18 " .6.25 18 " .8.00nd Head Iron " .40 % Discount 10 per cent. Funnel Coal Hods. All orders will be promptly filled to the extent of our stock, and the belance cancelled. Respectfully, BIDDLE HARDWARE CO. PHILADELPHIA, 11th month, 13th, 1876.

The Union Nut Co., 99 Chambers street, have added to their specialties Perry's Improved Meat Cutters and Sausage Fillers; Store and Barrel Trucks, Garden Barrows and Clark's No...... Diameter. Hight. Patent Wagon Jacks, all of which they offer to the trade at the manufacturer's best terms. We print below the list for Perry's Improved Meat Cutters and Sausage Fillers. The list for Meat Cutters is subject to discount 40 per cent., and

Donm	's Improve	d Went (Tuttoma	
Lerry	a Tuebine	и жеш с	utters.	
No. 1, Family	****** ***		eac	h, \$3.00
No. 2. "				4.00
No. 3, Hotel			44	5.00
No. 4, Butchers'			44	11.00
No. 4, Butchers'	geared		46	13.00
No. 5, "				36.00
	Sausage	Fillers.		
No. 11			per doz	., \$15.00
No. 10			66.	21.00

"Climax" and "XXX Universal" Purchase Gear Clothes Wringers, has issued the following eircular :

102 CHAMBERS STREET, N. Y., Nov. 28, 1876.
Herewith please find reduced price list of the
"Climax" and "XXX Universal" 'Clothes
Wringers, the sale of which I bave arranged for the exclusive agency.

The sale of Wringers with Purchase Gears is

rapidly increasing; the saving of half the la bor in operating a machine is a great considera-

rapidly increasing; the saving of nair the labor in operating a machine is a great consideration, especially with feeble women who are obliged to do their own washing and wringing.

Notwithstanding that these Wringers are much more expensive to manufacture, the price to the trade, when cash is received before the goods are shipped, is but 25 cents more than that of common cog-wheel Wringers.

With 13 years' experience in the business, and ample means, I hope to be able to mantain for these Wringers the high standard they have already obtained; for, I assure you, I shall seize upon every opportunity to improve them in every manner possible.

Fair and honorable dealing, I trust you will allow me to say, has been my policy in the past, and upon that basis I respectfully solicit a continuauce of your favors, which have heretofore been so liberally extended to me.

Respectfully,

N. B. Phelps,

The price list referred to in the above circular

The price list referred to in the above circular is as follows. These Wringers will be supplied to the retail trade only.

"Climax" and "XXX Universal" Purchase Gear Clothes Wringers.

	Size o	f Roll.	Retail.	Wholesale, In any quantity,
	Length.	Diam.	Price each.	(Per doz.)
No. 2 No. 116	10 in. 11 in.	1% in.	\$ 8.00 9.00	\$ 71.00 79.00
No. 5	11 in. 12 in.	23% in. 1% in.	10°00 10 00	89.00
No. 7 No. 8	12 in.	2% in.	12 00 15 00	108.00

A reduction at the rate of \$2 per dozen will be allowed when cash is received before the goods are shipped.

The Hart, Bliven & Mead Mfg. Co. have added to their assortment of Ornamental Hardware a large line of Flower Pot or Druggists Brackets, made of Iron, Ornamental and Matted Work, finished in Verd Antique and Enameled and Gilt. They have 1, 2, and 4 dishes for holding the flower pots, both single and double arms. It is claimed by the manufacturers that this is the finest line of these goods ever offered to the trade. The following is the list, which is subject to discount 50 per cent. :

We print below a list of seasonable goods manufactured by the Iron Clad Can Co., of Greenpoint avenue, Brooklyn, E. D. Their Iron Clad Fire Shovel is illustrated in their advertisement on the 40th page. This Shovel has a round handle, and is made from one piece of metal, both handle and pan : PRICE LIST OF COAL HODS, PIRE SHOVELS, ASH CANS

AND FRY PANS MANUFACTURED BY IRON CLAD The Iron Clad Fire Shovel.

1	Japanned. \$15.00 Tinned. \$24.00 Galvanized. 21.00 Discount 40 per cent.
	Centrifugal Ash Sifter.
	Japanned.
1	No. 1, 12x14 \$2:00 No. 3, 14x20 \$3:00 No. 2, 13x17 2:50
r	Galvanized.
1	No. 1, 12x14
	Lipped Fry Pans.
i	Polished,
	Per doz. No. 1, 8½ in. diam \$3.75 No. 2, 9 " 4.25 No. 5, 11 " 600 No. 3, 9½ " 4.70 No. 6, 12 " 700 Discount 50 per cent.
	The Iron Clad Coal Hod.
	Japanned.
-	Per doz. Per doz. 15 inch
	Galvanized.
	Per doz. Per doz.

Funnel C	oal Hods.
Japanned, Per doz. No. 15	16 10:00
Ash	Cans.
Japa	nned.

	-		
1	13 in. 14 '' 15 '' 17 '' 18 '' 20 ''	13 in. 15 " 24 " 24 " 24 " 24 "	\$2.25 2.50 4.00 4.75 4.75 5.00
	With Wood	Slats.	
7 8 9 10	15 " 17 " 18 " 20 "	24 ·· 24 ·· 24 ·· 24 ··	4.75 5.50 5.51 5.75
	Galvaniz	sed.	
1	13 " 14 " 15 " 17 " 18 "	13 " 15 " 24 " 24 " 24 "	2·50 3·60 4·50 5·50 5·50 6·50

		With '	Wo	ood Sla	te.		
		17 18	44		24 24 24 24	66	5°25 6°25 6°25 7°25
		(Cor	ers.			
	Japann	ed.		1	G	alvaniz	ed.
0	Diameter.	Price Per do	z.	No	Di	iameter.	Price. Per doz
	13 in	♦6:00		4		17 in	40.50

Discount 4) per cent.

The above are manufactured with the patent Wrought Iron Bottom, and corrugated wrought tron hoop around the top. All special sizes made to order. Customers in ordering need mention number only, and state whether to be Galvanized or Japanned. Graham & Haines have been appointed sole agents for the sale of Dodge's Kentucky Cow Bells, manufactured by T. P. Barclay, Louisville, Ky. They will deliver these goods either from stock or factory at the manufacturer's best terms. The following is the list for these goods, which is subject to discount 45 per cent. to regular trade. For quantity orders an extra discount is allowed :

Dodge's Kentucky Cow Bells. Nos. 0 1 1½ 2 3 Per doz. \$12.00 10.00 9.00 8.00 6.00

nearly 30 years this brand has been the standard stock Bell in the country, always honestly made of best material by skilled workmen.

We invite attention to the advertisement of Mann's Metallic Sieves, on the 34th page. The manufacture of these goods, interrupted by the death of the inventor, has been permanently re-established at Chicago. Graham & Haines continue to act as agents for the goods in this market. The merits of this Sieve have made it a necessity to the house-wife and to the dealer. Clean, neat and strong, it has in a brief time supplanted, wherever offered, the wooder, Sieves, which for more than a century had remained unimproved. The exhibit of salesincreased from 3500 dozen in 1871 to 30,000 dozen in 1875-sufficiently attests its merit and popularity. The patents under which this Sieve is made have been subjected to the ordeal usually imposed upon merit, but recent legal decisions have established their validity, and should effectually discourage further infringe

ment.

1550	Steel Books	Olsego Manure Forks
16:00	Solid Steel Shank, Improved Double Round End, Slotted Ferrules, Blue and Gold Furish.	Per doz.
10:00	No. 1, Oval, 4 Tine, D H'dle, C. S., Full Pol'd,	
14:50	No. 2, Oval 4 Tine, D H'dle, C. S., Full Pol'd,	
16:00	Steep Ferrule	Market

No. 36, Oval, 3 Tine, C. S., Full Pol'd, Plain
Ferrule, Bent H'dle. 9'50
Forule, Bent H'dle. 11'00
No. 360, Oval, 3 Tine, C. S., Full Pol'd, Strap
Ferrule, Bent H'dle. 11'00
No. 37, Oval, 3 Tine, C. S., Medium Size, Plain
8'75 | Sociation | Soci rerruie, Bent H'dle.
*No. 400, Oval, 2 Tine, C. S., Full Pol'd, Strap
Ferruie, Bent H'dle.
No. 41, Oval, 2 Tine, C. S., Medium Size, Plain
Ferruie. . 42, Oval, 2 Tine, C. S., Medium Size, Strap 8.50 No. 43, Oval, 2 Tine, Boys', C. S., Full Pol'd, Plain Ferrule Otsego Spading Forks.

Improved Double Round End, Slotted Ferrules, Blue Finish. No. 29, Flat, 4 Tine, D H'dle, C. S., Plain Fer-No. 30, Flat, 4 Tine, D H'dle, C. S., Strap Fer-18.50 31, Rayonet Back, 4 Tine, D H'dle, C. S., 18:00 | Standing room. The Vises are arranged on a revolving platform, on the base of which the No. 310, Bayonet Back, 4 Tine, D H'dle, C. S., 19:50 | name of the purchaser is neatly displayed in The cample Vises are numbered

A 1 Xxtra Manure Forks. Solid Steel Shank, Improved Double Round End, Slotted Ferrules, Gold Bronze Finish. No. 51, Oval, 4 Tine, D H'dle, C. S., Plain 52, Oval, 4 Tine, D H'dle, C. S., Strap Ferrule. (o. 53, Oval, 4 Tine, Long H'dle, C. S., Plain 14.00 Oval, 6 Tine, D H'dle, C. S., Plain Ferrule... o. 58, Oval, 6 Tine, Long H'dle, C. S., Strap 25.00

A 1 Xxtra Hay Forks.

PNo. 620, Oval, 2 Tine, C. S., Strap Ferrule, Bent H'dle..... 10.00 Peerless Hay Forks. Improved Double Round End. Slotted Ferrules, Gold Bronze Finish.

No. 0, Oval, 4 Tine, C. S., Bent H'dle, Plain Ferrule
No. 09, Oval, 4 Tine, C. S., Best H'dle, Strap Ferrule
14:50

13.00 15.00

EAGLE PORES, -LABELED EAGLE MFG. CO. Manure Forks. Oval, 4 Tine, D H'dle, C. S., Pol'd, Plain Ferrule

No. 18, Oval, 4 Tine, D H uic, C.

Strap Ferrule

No. 19, Oval, 4 Tine, Long H die, C. S., Pol'd, Plain Ferrule

Tine Long H die, C. S., Pol'd, Oval, 4 Tine, D H'dle, C.S., Pol'd, 12.1 Ferrule , Square, 4 Tine, D H'dle, C. S., Half , Plain Ferrule , Square, 4 Tine, D H'dle, C. S., Pol'd, Ford, Fance, 4 Tine, D H'dle, C. S., Ford, Strap Ferrule.

(o. 23, Square, 4 Tine, Long H'dle, C. S., Pol'd, Plain Ferrule.

(o. 24, Square, 4 Tine, Long H'dle, C. S., Pol'd, Strap Ferrule. 12:00 10.00 Hay Forks.

No. 47, 2 Tine, C. S., Pol'd, Piam Ferrule. No. 48, 2 Tine, C. S., Pol'd, Strap Ferrule. No. 49, 3 Tine, C. S., Pol'd, Piam Ferrule. No. 50, 3 Tine, C. S., Pol'd, Strap Ferrule. Solid Socket and Solid Shank Hoes. New List. Ladies' Hoes.

No. 5, Pol'd, C. S., Riveted Hoes.

No. 6. Full Pol'd, C. S., Selid Mortar
or Street Hoes, 10 inch. 12:00

Handled Planters' Hoes. New List.

No. 1, Oval, 4 Tine, D H'dle, C, S., Full Pol'd, Pol'd, 7 in, Blades.

No. 3, Planters' Solid Shank, Full Pol'd, 7 in, Blades.

No. 1, Planters' Solid Shank, Full Pol'd, 7 in, Blades.

No. 1, Planters' Solid Shank, Full Pol'd, 7 in, Blades.

No. 1, Planters' Solid Shank, Full Pol'd, 7 in, Blades.

No. 2, Planters' Solid Shank, Full Pol'd, 8 in, Blades.

No. 3, Planters' Solid Shank, Full Pol'd, 8 in, Blades.

No. 3, Planters' Solid Shank, Full Pol'd, 8 in, Blades.

No. 3, Planters' Solid Shank, Full Pol'd, 8 in, Blades.

No. 4, Oval, 4 Tine, Long H'dle, C, S., Full Pol'd, 8 in, Blades.

No. 6, Round, 4 Tine, D H'dle, C, S., Full Pol'd, 8 in, Blades.

No. 9, 10 To.

Garden Pol'd, 7 in, Blades.

No. 1, Planters' Solid Shank, Full Pol'd, 8 in, Blades.

No. 3, Planters' Solid Shank, Full Pol'd, 8 in, Blades.

No. 9, 10 To.

Garden Pol'd, 7 in, Blades.

No. 9, Planters' Solid Shank, Full Pol'd, 7 in, Blades.

No. 1, Planters' Solid Shank, Full Pol'd, 7 in, Blades.

No. 9, Planters' Solid Shank, Full Pol'd, 7 in, Blades.

No. 9, Planters' Solid Shank, Full Pol'd, 8 in, Blades.

No. 9, Planters' Solid Shank, Full Pol'd, 7 in, Blades.

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No. 9, Planters' Solid Shank, Full Pol'd, 7 in, Blades.

No. 9, Pla Corn Hooks. uperior C. S., Corn Hooks, Tempered and Polished....

> No. 6, Hay Fork Handies, 9.2 ites, Bored and Chucked.
> No. 7, Hay Fork Hidles, 6 feet, Bored and Chucked.
> No. 8, Hoe Handles, Bored and Chucked.
> No. 9, Rake Handles, Bored and Chucked.
> Manure Fork Ferrules, Polished.
> Hay Fork Ferrules, Polished. George N. Stearns & Co., Syracuse, N. Y., are introducing to the trade a neat and conline of samples of their Saw Vises. It is compactly made, occupying but five inches of 18:00 standing room. The Vises are arranged on a

These goods are made from the best quality cast steel, each Fork being thoroughly tested, and in point of finish, second to none. Handles selected from second growth white ash. We do not claim for these goods any superiority over our Standard "Ostego Fork," except in the style and quality of finish, and the extra care with which the handles are selected. iron work. The office here will be under the management of W. O. Fayerweather, treasurer of the company.

BRITISH IRON MARKET.

(Specially reported by cable for The Iron Age.)

WEDNESDAY, Dec. 6, 1876. Scotch Pig.-Since last Wednesday prices

Manufactured Iron.-There is an improved demand and prices are steady, with a fair business doing. Best Staffordshire Bars are quoted £8 @ £9.

Rails .- A fair business has been done, and 11.00 there is an improvement in the demand. Prices

American Pig.-The market is still without life; and we hear of no important sales, the business being confined to small lots for immediate use. No large lots are known to have been sold. Buyers are extremely cautious, and sellers seem to be firm at \$21 @ \$22 for 14:50 Foundry No. 1. The report that the Thomas Peerless Barley Forks. New Old List. List. List. Iron Company intend blowing in another furnace is not true. They have, on the other hand, decided not to blow in at present, though 13.50 the furnace is ready. We quote without change, \$21 @ \$22 for Foundry No. 1, \$19 @ \$20 for Foundry No. 2 and Gray Forge.

Scotch Pig.-In this department of the Iron trade there is no more animation observable than in others. Sales are confined to small ratail lots, and there are none worth quoting. The stock is light. We quote : Coltness, \$28.50 @ \$29; Glengarnock, \$28; Eglinton, \$26 @ \$26.50.

Rails .- During the week we hear of no 11.00 sales. The combination of the Steel Rail mills is calculated to stiffen the market, though it has not yet had much effect. The combination 10.50 have bought the control of the necessary patents for the sum of a million dollars, and raised the royalty to \$3 a ton, thus enabling any concern to receive a certain income from the goods 11:0 made by others if they themselves choose to lie still. Steel Rails are offered at \$50 @ \$51, delivered here. We quote: Iron, \$36 @ \$37 at

Old Rails.-No change since our last. We note the sale of 185 tons at \$20.

Scrap.-There is no change. \$25-50 @ \$26 for No. 1 Wrought from yard. Import of Iron into New York, from January 1 to November 30, 1876.

Tone. 13,590 296 5.956 From Foreign Ports 13.03 Total. e time, 1875....

DRLAWARE, LACKAWANNA AND WESTERN, at Hobo-ken, N. J.+

METALS.

Copper.-The market has been very quiet, there being but few buyers, and sales for the week have been confined to 100,000 pounds Lake Superior, at 20%c., and 200,000 pounds ditto at 20c. At the latter figure more might be had at the close. Baltimore we call 20%c., nominally. The manufacturers who bought shead some time ago are now receiving their Copper, and so near the close of navigation the arrivals are larger than usual. Within a week from now this Copper will be all in, the last boat, which left Nov. 25, having arrived at Detroit. Thenceforward the only receipts will be by fail. No change is reported by cable from London, Best Selected remaining £85 and Chill Bars £77. Mail advices from the same quarter have reached us as late as Nov. 23, from which we extract the following: "Copper has suffered in consequence of the warlike aspect of Eastern affairs, to the extent of £2, but has recovered since, prices at date being for Tough Ingots, £84; Best Selected, £86; and Sheets, £91." There is but a limited demand for manufactures, which we quote 31c. for Sheathing and 32c. for Bolts and Braziers New Yellow Metal Sheathing, 181/c. @ 19c. and Yellow Metal Bolts, 26c. @ 28c., net cash.

Tin.-The market was rather firmer here till Saturday, since when it has shown less strength a moderate business has been transacted. We quote at the close as follows: Straits, 17%c. @ 17%c. ; English Refined, 17%c @ 17%c. ; ditio Common, 17%c. @ 17%c.; and Banca, 19%c all gold, large lines. London from £79 for Straits has yielded to £76 @ £76. 10/; the latter figure is equal to about 18%c., gold, here Mail advices are to hand from England to the 231 ultimo, reading as follows: "Owing mainly to the receipt of more unfavorable news from the East a decline in Straits Tin of £3 per tor occurred, half of which drop has been recovered, and the market closes with considerable buying, at Ingots (L. and F.), £83; Bars, £84 Grain Bars, £39; Granulated, £91; and Straits, £77. 10/ @ £78." Tin Plates.— Our own market has been dull, while in England Plates have been quiet but firm after the late large business. We quote at the close as follows, gold, per box, large lots, ordinary brands : Charcoal Bright, \$6.75 @ \$7 ditto Ternes, \$6.25; Coke Tin, \$6@ \$6.12% and Ternes, \$5.50@\$5.6214. From Liverpool they write under date of 23d ultimo, as follows: "The better feeling noted last week has been maintained, and the demand has spread from Coke Tins, with which it commenced, to the other descriptions. Makers are now for the most part provided with work for this and next month, and are unwilling to book further forward, except at advances ranging from 6d. @ 1/ over the lowest point touched."

Lead .- There have been sold in this market during the week 500 tons Omata and Missouri Lead, at rates laying it down here at 5 90c. and 6.15c., currency. Newark is scarce on the spot, and consumers in want of it have had to pay as high as 6.07%c. @ 6.10c., currency. Soft at St. Louis is dull at 5%c., currency, but Selected there is firm, and sales have been made as high as 6c., currency; freight, 24c. The general market for Common Domestic looks duli; there is little demand, consumers still being sufficiently stocked, and there being due beside from California some 1100 tons ere the year comes to a close. Foreign is quiet; we quote the same nominally 6%c., gold. Accounts by mail from England are to hand dated Nov. 28d, and read as follows: "Spanish Pig is in rather better supply; but this has had no depressing effect on the market, as even with the additional arrivals there is not more than sufficient to meet the demand for consumption. The belief obtains among both buyers and sellers that prices will further advance. Rates at date are: Spanish Pig, £21.5/, cost, freight and insurance less 1 per cent.; English, £22. 7/6 @ £23; Sheets, £23. 10/; Piping, £24, and ditto, small, £24. 10 /." Manufactured remains in moderate request at 8%c, for Bar, 9c. for Pipe, and 9%c. for Sheet, less the usual discount to the trade.

Spelter and Zinc .- Domestic Spelter, consisting of good brands, without difficulty brings 6%c., currency, here; while common quality made from blende, and not quite as reliable for brass manufacturing, is offering at 6%c., currency. In Foreign we have no tran- present quoted prices. Concessions are, howand quote the same 6%c, to 7c., gold, neminally, with a stock of 50 tons. There is nothing new from Europe. Sheet Zine is very quiet, and we nominally quote market, and Coal offered in lots here and there. Domestic, 7%c. to 8%c., currency, here, as The cases are not sufficiently numerous to indito quantity, and Mosselmann, 8%c. to 8%c., cate a great surplus, but they show that the

Antimony .- A slightly Improved tone in noticeable, yet trade therein remains circumscribed. We quote the same 18%c. to 14c., gold, as to quantity.

OLD METALS, PAPER STOCK, &c.

We have no perceptible change to report in the condition of the Old Metal market since last week. Business continues very dull, and trade has had another knock down in this prices remain nominally unchanged. The demand for Rags is steadily improving, and the past week has been an active one in some deartments. Book and Paper Stock are selling slowly, but prices are firm at quoted rates, Grass Rope is in fair demand at market prices. We quote the following as the current purchas-

Old Metals.-Copper, 14c. @ 15c. per lb. Old Metals.—Copper, 14c. @ 15c. per 15.; Yellow Metal, 10c.; Brass, 8\(\frac{1}{2}c.\) @ 9c.; Composition, heavy. 11c. \(\text{(a)}\) 12c.; Lead, solid, 5c.; Tea Lead, 4c. \(\text{Zinc}\), 4c.; Pewter, No. 1, 12c.; do., No. 2, sc.: Spelter, 5\(\frac{1}{2}c.\), Wrought iron, \$\frac{2}{2}\)! per ton; Light do., \$\frac{1}{2}\) per ton; Stove Plate, \$\frac{1}{2}\) per ton: Machinery, do., \$\frac{1}{2}\) 11 per ton;

Burnt Iron, \$4 per ton.

Rags, &c. —Canvas, Linen, 4½c. @ 5½c.;
do. Cotton, No1, 5½c.; No. 2, 2½c.; White,
No. 1, 5c.; No. 2, 4c.; Colored, do., 2c.;
Mixed, Weolen, 2c. @ 3c.; Soft, do.

5½c.; Gunny Bagging, 1½c.; Jute Butts, 1¾c. (@ 2c.; Kentucky Bagging, 3c.; Book Stock, 3½c.; Newspaper Stock, 2½c.; Waste Paper and Scraps, 1½c.; Kentucky Bale Rope, 4c.; Oakum Jinit, No. 1, 4¼ @ 5c.; do. No. 2, 3c.; Tarred Shaking, 1c. (@ 1½c.; Grass Rope, 3c.

EXPORTS

Of Hardware, Iron, Machinery, Metals, &c., from the Port of New York, for the Week ending December 5, 1876:

		Scranton 3.77 2.69 3.67 3.61 3.34
Danish West Indies.	British Guiana.	1 1
Quan, Value,	Nails, kegs 10 \$60	FREDERICK A. POTTS, 110 Broadway, New York
Hdw., pkgs 5 \$115		
Hamburg.	Harre.	L. A. W. C. Co.'s Wilkerd
		Barre
Machinery, cs. 29 2,753	Tacks, cs 36 1,358	L & W C Co's Old
Hwd., pkgs 29 1,730	Mach'y., cs 57 4,914	Co. Lehigh 8-75 3-25 8-25 8-75 8-25
Copper, cks 58 22,960	Car spg's, cs 2 204	L. & W. C. Co.'s. Ply.
Sad irons, cs 58 500	Copper, cks 197 38,500	L. & W. C. Co.'s, Plymouth Red Ash 3:00 8:00 8 85 8:35
Revolvers, cs 1 600	Ag. imp., cs 19 1,678	
Mf. iron, ca 10 279	Cuba.	brook Lehigh 3.75 3.35 3.25 3.75 3.25
Bremen.		Scranton
Mach'y, cs 5 444	Ag. imp., pkgs 15 760	annual transfer to the section of a section
Mf. iron, pkgs. 47 1,518	Iron safe 1 275	
Cutlery, ce 1 1,000	Tel. matls, cs. 3 293	WHITNEY, M'CREARY & KEMMERER, 111 Broadway,
Copper, cks 18 4,750	Nails, kegs1619 4,571	New YorkJohn White, Sales AgentF.o.b. at
Ag. 1mp., pkgs 15 325	Gas fixt's, cs 2 308	Elizabethport or South Amboy.
Hdw., cs 3 480	Nails, cs 10 156	Upper Lehigh and Coun-
London.	Tinware, cs 3 120 Cop. tubes, cs. 8 450	cil Ridge 3.75 3.25 3.25 3.75 3.85
	Cop. tubes, cs. 3 450 Railroad bars. 2081 8,408	1 Ryechardt Wyoming 3.00/8.75/3.85
Spelter, slabs. 127 400	Mf. iron, pkgs. 478 2,818	Wilkes-Barre. 3 00 3 00 3 75 3 25 Shamokin 3 78 3 25
Mf. iron, pkgs. 26 226	Spikes, kegs. 86 529	Shamokin 3.75 3.25
Mach'y, pkgs 7 693	Railroad cars., 5 500	Gast Spring Mountain
Pumps, pkgs 3 240	Mach'y, pkgs.1005 23,660	Lehigh
Hardware, cs 4 130	Cutlery, bxs., 11 362	- Comments and
Ag. imp., pkgs 7 175	Grindstones 247 448	t a amann tit Broadway Coal at Namhungh
Liverpool.	Car wheels 12 72	A. s. swords, 111 Broadway.—Coal at Newburgh.
Mach'y, pkgs 43 4,499	Boiler tubes 143 630	
Steel, cs 7 800	Hdw., pkgs 137 3,172	Pittston Coal 2.80 2.80 2.80 2.85 3.60 3.70
Revolvers, cs., 1 560	Rivets, kegs. 5 84	
4g. imp., pkgs 20 1,800	Iron goods, cs. 7 934	
Hardware, cs 66 2,500		G. B. LINDERMAN & CO., No. 111 Broadway.
Met'l g'ds, cs 1 177	Hayti.	o. B. Lindbindan & co., No. 211 bi oddina.
Scy.st'nes, bxs. 200 188	Hdw., pkgs 18 279	Sugar Loaf, (Lehigh) 8 75 8 25 3 25 3 75 3 50
Wringers, cs., 10 200	Mf. iron, pkgs. 8 157	ought doing (beingh o to o to o to o
Pumps, pkgs 8 200	Nails, kegs 57 188	
	New Grenada.	nameron a print 111 Panadway
Glasgow.		MEEKER & DEAN, 111 Broadway.
Ag. imp., cs 14 1,250	Cartridges, cs. 173 5,485	Lackawanna Valley 3.00 3.00 3.00 3.00 3.75 3.25
Mach'y, cs 31 3,805	Mf. iron, pkgs 50 186	Kingston, Wy'm'g White
Mf. iron, cs 4 650	Cutlery, cs 183 5,083	Ash
British North Amer-	Ag. imp., pkgs 33 922 Guns, cs 63 4.487	Channey Wyoming Red Ash. 3.25 3.85 3.25 Wilkesbarre 3.00 3.00 3.00 3.00 3.03 3.25 3.25 Research Lobich 3.25
ican Colonies.	Gune, cs 63 4,487 Mach'y, pkgs 72 6,477	Neg 9:00 9:00 9:00 9:00 9:00 9:00 9:0
ican commen	Hdw., cs 90 8,157	Beaver Brook Lehigh 3 75 3 25 3 25 3 75 3 25
Mf. fron, pkgs. 18 185	Nails, kegs 30 105	Cross Creek Lehigh, at
British West Indies.	Iron goods, cs. 10 387	Elizabethport, N. J
		animatic input to 14, 0 0 40 0 40 0 10 10 20
	Venezuela.	
Hdw., cs 15 132	Mach'y, pkgs. 31 2,764	* Deliverable at Weehawken.
British Honduras.	Forge 1 665	†Auction prices of November 21.
	Iron, pkgs 671 699	
Mf. iron, pkgs. 3 67		W D C. I . C. I
Nails, kegs 90 72	China.	We quote Bituminous Coal as follows:
British Australia.	Locks, pkcs 5 270	Cumberland, at Georgetown\$3.50 % \$
	Mach'y, pkgs. 1 67	West Virginia, at Baltimore 450 3 6 00 1
Machinery, cs. 14 1,988	Brazil.	Kittaning f. o. b., Baltimore 425 & 4.35 8
Ag. imp., pkgs 15 249		Newburg Orrel, at "
Mf. iron, pkgs. 8 400	Nails, kegs 55 156	Despard, at Baltimore
Hardware, cs., 436 10,873	Ag, imp., pkgs 83 201	Broad Top, at South Amboy 15 4.75 1
Nails, kegs 81 337	Irons, bxs 10 67	Morrisdale, Wigtons

IMPORTS

Of Hardware, Iron, Steel and Metals into the Port of New York, for the week end-

Hardware.	Moore J. B. & Co. Rod, coils, 523
Alexandre E. L.	Mitander Nils,
Galv'ized wire, coils,	Bundles, 916
3	Nevins P. J. & Son,
Boker Hermann & Co.	Scrap, tons, 2%
Mdse., pkg-, 7	octage, tome, eye
Arms, cs., 137	Steel.
Dallett, Boulton & Co.	Brown William,
Pumps, pcs., 7	Bundles, 89
Chains, fathoms, 6	Cases, 3
Anchors, 1	Colby J. L. & Co.
France P. A. & Co.	Cast wire rods, bdls
Mdse. pkgs., 2	158
Hollis H. B.	Haigh J. Lloyd,
Guns, cs., 1	Wire, bales, 21
McCoy & Co.	McCoy & Co.
Савев, 7	Bundles, 199
Moore's John P. Sons,	Naylor & Co.
Moore's John P. Sons,	Cast axles, 12
Cartridge cases, cs., 7	Scrap, spring, lots, 1
Gun wads, cs., 4	Prosser Thos. & Son,
Schoverling & Daly,	Forgings, 85
Mdse., pkgs., 7	Sulzbacher, Hyman
Squires H. C.	Wolffe,
Guns, cs., 2	Packages, 32
Uhlman S.	Bars, 321
Metal ware, cs., 5 Wilson J. W. & Co.	Woodford W. O. Cases, 10
Cases, 2	Order.
Ward Asline,	Bundles, 29
Mdse. pkgs., 8	Cast tires, 4
Wiebusch & Hilger Hdw.	Wire rods, bdls., 27
Co.	Rods, bdls., 45
Hardware, cutlery &	
chains, cks., 78	Metals.
	Drexel, Morgan & Co.
Iron.	Lead, pige, 1875
Congreve C. & Co.	Naylor & Co.
Rods, bdls., 47	Tin plates, bxs., 398
Dallett, Boulton & Co.	Stephani A. & Co.
Tubs, 105	Tin, cs., 3
Grinnell, Minturn & Co.	Order,
Scrap, railway, tons,	Tin slabs, 1703
185	Antimony, cks., 25
Henry A. T.	Tin plates, bxs., 107
Pig, tona, 125	Tin ingots, 582
Henderson Bros.	Without Bill of Lading,
Pig, tons, 100	Tin plates, bxs., 138

COAL.

The state of the market may be expressed in a very few words. The demand for Coal is small but steady. A large number of wholesale dealers say that there is a fair trade at the ver easily obtained, though not large. The prices are so low that only a small margin remains. We hear of cargoes of Coal seeking a definite settlement of the political quesmarket is somewhat weak.

The reduction of tonnage, which has been so much talked of, is but lightly felt as yet. Stoppages have not taken place as yet to any con siderable extent, and the tonnages are not greatly affected, production being made just about equal to the demand in most instances Saward's Coal Trade Journal says, in com. menting upon the reduction of retail prices made by some of the companies: "Retail city, through the action of the Pittston and Lackawanna Coal companies; the former now only charges \$4:20 in the yard for Stove size. and \$3.90 for the other sizes, while the Lackawanna Coals are offered at a reduction from the previous price lists for this quality of

We continue our quotations of prices, as there are no open changes in them, all concessions being kept private:

Coal.

Pitteton .

PENNSYLVANIA COAL CO.. at New York, 65 cents per ton additional.*

We quote Bituminous Coal as follows:
Cumberland, at Georgetown ... \$3:55 22 \$
West Virginia, at Baltimore ... 459 35 \$
Kittaning f. o. b., Baltimore ... 428 36 \$
Newburg Orrel, at ... 68 \$
Despard, at Baltimore ... 15 \$
Broad Top, at South Amboy ... 15 \$
Morrisdale, Wigtons ... 16 \$
Cunard ... 42 \$
Connoil dation Coal Co, f. o. b., George-@ 8·50 @ 8.65 @ 5.50 @ 4.00 @ 8.71 more.
In barges at New York.
Maryland Coal Co. f. o. b., Baltimore.
Varyland Coal Co. f. o. b., Georgetown

PHILADELPHIA.

Office of The Iron Age, 220 South Fourth St., } PHILADELPHIA, Dec. 5, 1876.

The past week has been one of the dullest of the many dull weeks which we have had to report during the year. The principal and immediate reasons for this depression have been adverted to and considered in our late reports, and while the same hindrances prevail to as great an extent as before, it is not necessary to It is a fact, however, recognized and admitted by all parties, that while the present uncertainty in political matters continues no improvement can possibly take place, while in nany instances business is being largely curtailed or entirely suspended. Some of the rolling mills, sheet mills, etc., shut down on have not yet resumed operations, and may not to the close of navigation, may be considered resume, unless there is some change in the aspect that nothing of importance will be done this year under any circumstances, and that while the indications a little while ago were all in favor of an increased business after the holidays, it is thought now that the present inactivity may continue until after the actual inauguration of the new president. This condition of affairs is greatly to be deplored. After the depression our industries have been suffering for months past, it is peculiarly unfortunate that they should be again thrown back at the very moment when they were be ginning to revive into life and activity. Orders from the South, which under ordinary circumstances would have been filled with prompt satisfaction, are held in abeyance. Large contracts on the point of being closed are waiting further developments. Nothing is being done; the whole country is waiting for some tion. A good many inquiries are still being made, and there seems to be some important projects under consideration, and it is yet hoped that the new year will bring with it a better state of affairs. The most cheering feature we have to note in the business of this city is the extraordinary growth of the export trade. The increase of November compared with the previous month is about 50 per cent. The eleven months of 1876, as compared with the whole of 1875, show a still greater ratio of increase, the exact figures being as follows: 1875. \$29,065,879; eleven months 1876, \$45,487,013. In this connection we may note the fact that some orders for machinery and other manufactures are being received from various parts of Europe, which it is anticipated will develop into a permanent business. As being of special interest to our readers we may mention an or der received on Saturday by Lovegrove & Co. of this city, for one of their Whitmore engines for Germany. Lonergan & McBride also received three orders (Sweden, Germany and Holland) for a full line of patent oil cups and automatic steam chest and cylinder lubricators. We are also informed of sample orders in other branches, and it is satisfactory to know that efforts are being made in this country to open a trade with distant nations, and that they in return by their selections appear willing to give the matter a fair trial. The sale of build-

DELAWARE AND HUDSON CANAL CO., at Weehaw- slaughter. The first cost being \$2,319,493; the Old Rails in exchange for new is a frequent Lenigh and WILKES-BARRE COAL Co., f.o.b, at Port Johnson, N. J.
Old Company's Summit., 3, 75, ..., 3, 25, 3, 25, 3, 75, 3, 25
Honey-Brook Lehigh, 3, 76, ..., 3, 25, 3, 25, 3, 75, 3, 25
Wilkes-Barre, ..., 3, 00, 3, 00, 3, 00, 3, 00, 3, 25
Plymouth Red Ash. ..., 3, 00, 3, 00, 3, 00, 3, 65, 3, 35

week. the market. From present appearances, however, it is very improbable that there will be sufficient increase in the demand to warrant much addition to the present production, but whether or not production will be regulated by consumption is very doubtful. Meantime, the Bechtelsville will blow in a furnace next week, and the Kutztown one, while the Glendon have two filled ready for blowing in, the Henry Clay one ready, and the Thomas Company have \$21.50 as a fair average price. one ready also. It is not likely that any of these will blow in before January, and perhaps not then, but if business seems to warrant any increase, they are ready for immediate operations. In many quarters the opinion is pressed that the Iron trade must remain in its present condition for a long time to come. It is argued that the development of the railway system of this country absorbed large quanti-Chauncey Wyoming Red
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3 2 3 2 5 3 2 as the roads are now almost completely equipped and Steel Rails do not require to be renewed very often, it is argued there cannot be any such demand from the railways as formerly. This view of the case may be worth attention in the meantime it is not without influence in some quarters, and may partly account for the dry, \$21 to \$22; No. 2 do., \$19 to \$20; Gray

> Blooms.-Business continues dull in this as in other specialties, and while we make no change in quotations, they must be considered almost nominal, as no business of importance is being done. We quote: Charcoal Scrap Blooms, \$45 to \$47; Charcoal Ore Blooms, \$40 to \$42; Charcoal Billets of superior quality, \$55 to \$62; and Bars for converting into steel, made of best Champlain Iron, \$72 to \$75. Strictly Cold-blast Charcoal Blooms, hammered, are quoted \$62 to \$64, and Billets, \$70 to \$72.

Forge, \$18.50 to \$19.50.

Ores .- There is no important business to report, but some sales are reported as follows: New Jersey Magnetics-Hacklebarney Bessemer Select (broken), \$3, cash, f. o. b.; Red (washed) for Foundry Metal, \$3.75; do. go over the ground and repeat them in detail. Hoff, for Foundry Metal, \$3.75 to \$4, f. o. b.; Port Oram Magnetic Lancaster Iron, suitable for Anthracite or Bessemer purposes, \$3 per ton., f. o. b., Baumgardner's Station, Pa. Virginia Ores are entirely nominal, and offered f. o. b. at Richmond, Va., as follows: Magnetic, \$4; Specular for Bessemer, \$4.50; Selected ditto, 65 to 70 per cent. of Metallic Iron, Wednesday night for Thanksgiving day, and \$5. Champlain and Lake Superior Ores, owing almost nominal. Latest sales are as follows: of things. The general feeling seems to be Champlain Ores, 50 to 60 per cent. of Iron, \$2.75 to \$3, at mines; with 65 per cent. of Iron, \$3.50. At Cleveland, Lake Superior Ores, \$7;

Republic Mine, \$7.50. Manufactured Iron .- We have no improvement to report, but the market is, if any thing, a little duller, and more stagnant than There is no demand worth naming; ever. many of the mills are shut down temporarily, and none are running more than about half their capacity. Prices are too irregular to quote with any degree of accuracy, although a few of the leading brands are held at outside quotations. Sheet Iron shows no improvement, and it may be considered about the dullest thing on the whole list. Skelp is quiet-There has been no recent sales of any importance, and the mills are about finishing up their old ntracts. Plate and Tank Iron are a though there have been a good many inquiries of late indicating some demand in the immediate future. The same may be said of Bridge Iron. Inquiries are frequent, and there is likely to be some activity in this department. We quote : Bar Iron 1 90c. to 2 10c. for Ordinary Brauds, and 2-20c, to 2-25c., for Best Refined : Tank Iron, 3%c. to 3c. and upward, according to quantity; Skelp, 21/c. to 21/c.; Muck Bara. \$37 to \$39.

Horseshoe Iron is quiet, but prices are unchanged. We quote: \$67.50 to \$69 for 11/4 and % to %.

Steel Rails .- The demand is not very active, and prices are, if anything, a shade weaker, although no change is made in quotations. The capacity of production seems to be in advance of the demand, hence competition is very active, and concessions are frequently made, although prices are nominally unchanged. The business of the past fortnight has been very limited, and mostly in lots of a few bundred tons each, the aggregate for the two weeks not amounting to more than 6000 to 7000 buyers in quantity.

ing to the varied quality of the Rails, as well and \$2.75, 60 days, for 200 kegs and upward, as the conditions of sale. An out and out sale with the usual discount of two per cent. for

proceeds of sales, \$288,000. The cost of re- occurrence, and occasionally a transaction is lion and similar structures, are not articles re- of inquiries, and some orders here from the quired for everyday use.

Pig Iron—Continues about the same as last pended, or, at all events, the orders are held in The demand does not improve and abeyance. A few small lots change hands ocprices are unsettled, although sales are mostly at about late quotations. Stocks are gradually at an extreme figure, but so part payment is to getting into small compass, and if the present be in old rails, the cash result may be a matter ratio of supply and demand is continued, no of doubt. We quote the cash price at mills, further decline will be likely to occur. On the nominally, as follows: Ordinary, \$35-50 to

Old Rails .- There is very little business doing, and not much uniformity in prices. If any round lots were offered urgently, some sharp concessions would have to be made in order to secure a prompt cash buyer. The sales reported are all in the neighborhood of \$21-lots of 100 tons, mostly. Some parties, however, are holding at much higher figures, and a few exceptional sales are said to have been made at higher prices. We quote \$21 to

Car Wheels .- The market is unchanged, and no recent transactions are reported; buyers and sellers apart in their views. Buyers offer about \$19, while sellers ask \$19 50 and upward.

Scrap Iron .- There is no great quantity offering, and prices are pretty well maintained. We quote Wrought, \$24 to \$26, with several sales reported at \$25, and 100 tons Ship Plate at \$26. Cast is rather quiet at \$15 to \$17.

Nails .- There is very little demand, but as there has been a curtailment of production, late quotations are still maintained, viz., \$2.90 to the trade and \$3.15 to consumers.

Tin Plates .- The demand is fair, but not specially active. Prices are steady and firm, however, owing to the reports from abroad, which indicate a further advance in prices. We quote, in United States currency, as follows: I. C., 10x14, \$8 to \$8.25; I. X., 10x14, continued depression. We quote prices as follows, sales all being in small lots: No. 1 Foun- 28x20, \$15.50 to \$17; other good brands, \$14.25 to \$14.75; good fair, \$13.50 to \$14.50; Bright Tin for Cans, &c., \$6.50 to \$7.25; good Bright Tin, do. \$7 to \$787%; Coke, Leaded, 14x20, \$6.50 to \$6.75.

Lead .- The strength of the Foreign market and small stock here for immediate wants seems to have but little effect upon buyers, who are now looking for the usual dull winter trade, and buy only small lots of domestic from hand-to-mouth. We quote Soft Common, \$6.05 to \$6.10, spot; Western a shade under. Manufactured is steady. We quote: Bar 8%c.; Pipe, 9c.; and Sheet, 10c., less 10 per

Shot-Remains quiet at the following quotations: Drop Shot, 25 lb. bags, 9%c.; do., 5 lb. bags, 10%c.; Buckshot, 25 lb. bags, 10%c.; do., 5 lb. bags, 11%c.; Conical Balls, 25 lb. bags, 10c. per 1b., net; Bar lead, 5 oz., 1/4 lb. and 1 lb. bars, 8%c., less 10 per cent. to the

Old Metals .- The demand is very light, and offerings large. We quote: Heavy Old Copper, 16c. to 16%c.; Light Tinned Copper, 14c.; Copper Bottoms, 181/c.; Heavy Red Brass, 13c.; Light Red Brass, 121/c.; Heavy Yellow Brass, 11c.; Light Yellow Brass, 10c.; Heavy Clean Pipe Lead, 51/2c.; Junk Lead, 5c.; Tea Lead, Light Paper, 51/4c.; Tea Lead, Heavy Paper, 5c.; New Zinc Clippings, 41/4c. to 41/2c.; Old Sheet Zinc, 4c.; Yellow Brass Turnings, Sc. to 9c.; Red Brass Turnings, 10c. to 11c.; Plumbers' Lead Joints, 6c.

PITTSBURGH.

Office of The Iron Age, 20 Fifth Avenue, PITTSBURGH, Dec. 5, 1876.

Pig Iron .- There is no movement scarcely, and while the market is dull and weak in tone, there has been no quotable change in prices since the date of our last report. Common stock is offering freely, and that, too, at rates in buyers' favor, while good Mill Irons, being in light supply, are held with considerable firmness, notwithstanding there is not much inquiry for them. Bituminous Coal and Coke Irons are quoted as follows: No. 1 Foundry, \$24 to \$25, 4 months; No. 2 Fountry, \$23; Gray Forge, \$20.50 to \$21.50; White and Mottled. \$18 to \$19. Hanging Rock Charcoal-No. 1 Foundry, \$27 to \$28, 4 months; No. 2 Foundry, \$25 to \$26; No. 3 or Mill, \$23 to \$24; Hecla Cold Blast, \$45; Eastern Cold Blast, \$35.

Manufactured Iron .- There is no im provement to report in the demand, and it is not likely that there will be until next month. if then. A number of firms will shut down within the next few weeks, in order to take stock and make repairs, and it is doubtful whether some of them will start up then unless the outlook is considerably more encouraging than it is just now. There is no doubt but the in regularity in prices has a tendency to curtail business, as neither jobbers nor consumers will carry any more stock than they can avoid while this continues, as they are apprehensive that prices may go still lower. Quotations may be given on a basis of 2c. for Bars, although it is rumored that orders are being placed under the rates named.

Nails.-The demand continues light, as it nearly always is at this particular time, and it will doubtless continue so during the next 60 tons, which includes all the sales of the East- days. The production, both here and at ern mills, so far as we know. We quote \$50 at | Wheeling, has fallen off considerably recently, the mills as the nominal asking rate, but there and there will be a pretty general auspension is no doubt concessions would be made to by the close of the year, as makers are loth to accumulate stock. Prices steady, but un-Iron Rails .- Prices are very irregular, ow- changed; \$2.85, 60 days, for less than 200 kegs,

Steel .- There is a fair business, although the demand has fallen off considerably, as it usually does this month. It is probable, however, that business will pick up again next month, and even now makers generally have about all they can do working up old orders. Prices unchanged, although in buyers' favor, and while they are lower now than ever before in this country, it should be borne in mind that the cost of production has been reduced correspondingly.

Scrap.-The Scrap market continues very dull, and, notwithstanding the stock is light and the receipts are small, the supply is fully equal to the demand. No. 1 Railroad Wrought Scrap quoted at \$25 to to \$26 per net ton, and Wheels at \$20 to \$22 per gross ton.

Hardware.-Some manufacturers report that they have had about all they could do since the 1st of July last, while others, and these possibly are in the majority, make a very different report. Jobbers also complain of dullness, and there is no prospect of any improvement now until next month. No change in prices. Messrs. Lewis Oliver & Phillips expect to get out a new list on heavy hardware about the middle of this month.

Petroleum .- Nearly if not all our refiners are again in full blast; not only have they got rid of their surplus, which accumulated during the time exporters were out endeavoring to force down prices, but they are sold from 15 to 30 days ahead of their production. It is intimated that the Standard Combination are realizing a profit of about three dollars.

BOSTON.

DEC. 2.—Pig is quiet, but some think that the weakness is not so marked as a week or a fortnight ago. The stock here is not large. We continue to quote all the way from \$19 to \$24. We quote Gartsherrie \$31 and Eglinton \$29, currency. Bar is quiet and steady at \$48 for Refined and \$39 for Common. Steel is steady without change in quotations. The decline in gold helps importers. We quote: American Tool, 14c. to 15c.; American Machinery, 8c. to 9½c.; Bessemer Tires, 5½c.; Sweet's Excelsior Tire, 7½c.; English Tool, 15½c., 20id. Copper has had a broken week, without nuch change in the market. Lake Ingot is quoted at 20½c. to 20½c. The talk was yesterday that a war abroad looked more probable. The London cable quotation is £1 lower during the fortnight. For Manufactured we quote: New Sheathing, 31c.; Bolts and Braziers, 32c.; Yellow Metal Bolts, 26c.; do. Sheathing, 21c. Lead is quiet, but a trifle firmer at the close, under better advices from the Vest. We quote: Pig, 6½c.; 6%c. to 6%c., currency, for Domestic; Sheet, 9%c.; Pipe, 9c.; The Lined Pipe, 16½c.; Bar Lead, 9c., less usual trade or 10 per cent. discount. Antimony is quiet at 14c., gold, for Boston spot lots, and Speller is weak at \$7 on the spot for 10 ton lots. Tin is quiet, but holders are very firm. The improvement abroad continues. We quote: Straits, 17½c. to 18c; Banca, 21c. to 21½c.; Refined English, 17½c. to 18½c., gold. We quote Plates: Charcoal 1. C., \$7.50; Coke, \$6.25; and Terne at \$7.50 to \$8, gold.—Commercial Bulletin. DEC. 2.-Pig is quiet, but some think that the

ST. LOUIS.

Messrs. Spooner & Collins, Iron commission agents, 409 North Third street, St. Louis, under date of Nov. 30, report the Iron market as follows: Our market remains firm at quotations. Demand rather light the past week. We quote same as last:

CHARCOAL

CHARCOAL		
Missouri No. 1 Foundry	22°00 @ 23°0 22°00 @ 23°0 25°00 @ 26°0 28°50 @ 24°0 23°00 @ 24°0 23°50 @ 23°0 22°50 @ 23°0	0-4 mos. 0-4 mos. 0-4 mos. 0-4 mos. 0-4 mos. 0-4 mos.
COKE.		
Alice H. R. Ex. No. 1 F'dry. 1 No. 1 F'dry. 1 No. 1 F'dry. 1 No. 1 F'dry. 1 No. 2 F'dry. 1 No. 2 F'dry. 1 Foundry. 1 Foundry. 1 Foundry. 1 Foundry. 1 Foundry. 1 Chattanooga, Tenn., No. 2 Foundry. 1 White and Motiled.	25·00 @ 25·00 @ 24·50 @ 28·50 @ 23·50 @ 25·00 @ 22·50 @ 21·00 @	-4 mos. -4 mos. -4 mos. -4 mos. -4 mos. -4 mos. -4 mos. -4 mos.
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Missouri No. 1 Foundry	\$25.00 @ 26.0 23.00 @ 24.0 23.00 @ 23.0	0-4 mos. 0-4 mos.
COLD BLAST CHARCOAL	-All Number	ers.
Hanging Rock	\$35.00 @ 46.0	0-4 mos.

60 00 @ 33 00—4 mos. 30 00 @ 33 00—4 mos. 28 00 @ 30 00—4 mos. 24 rates. 95 @ 70 @ LOUISVILLE.

Messrs. Geo. H. Hull & Co., under date of Dec. 4, write us as follows: General complaint has been heard in all branches of trade during the past week of suffering in consequence of the political uncertainties. The Pig Iron market has been unusually dull, but in view of the temporary cause, prices have remained the same as last quoted. Four months allowed on quotations below: HOT BLAST CHARCOAL, No. 1 F'dry, from Hanging Rock Ores. \$24 00 @ 25 00

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CINCINNATI.

Messrs. L. R. HULL & Co., under date of Dec. 2, write us as follows: Pic Inon.—While our market is not very active, and there are no decided indications of any important changes

immediately, the general tone is steady and firm, and it is generally believed we have reached bottom, and the next movement will reached bottom, and the next movement will be an upward one. Buyers appear so generally inclined to admit this as the situation that the present political entauglement and consequent uncertainty until it is settled appears the only cause preventing a much more active demand. Our prices, as below, remain unchanged:

HOT-BLAST FOUNDRY.

No. 1, Stonecoal 22:00 @ 22:00—4 mos.
Virgin's No. 1, Coke 23:00 @ 24:00—4 mos.
Als. and Tenn, No. 1, Charc' 23:00 @ 24:00—4 mos.
No. 2, 21:50 @ 22:00—4 mos.
No. 2, 22:00 @ 22:50—4 mos.
Red Short, No. 1, Coke 25:00 @ 25:50—4 mos.
Fannie U. S. Scotch, No. 1 ... 24:50 @ 4 mos.
Southern Ohio Am. Scotch,
No. 1 ... 25:50 @ —4 mos.
No. 1 ... 25:50 @ —4 mos. No. 1.... Forge irons.

FORGE IRONS.

Hanging Rock No. 1, Charcian Pton. \$21.00 @ 21.50—4 mos. Hanging Rock No. 1, Coke... 21.00 @ 21.50—4 mos. Virginia, No. 1... 20.59 @ 21.00—4 mos. Virginia, No. 1... 20.50 @ 21.00—4 mos. Als. and Tenn., No. 1, Charc'i 21.50 @ 21.00—4 mos. Red Short, No. 1, Coke... 22.00 @ 23.00—4 mos. Cold Short, No. 1, Stonecoal.. 19.00 @ 20.00—4 mos. CAR WHEEL AND MALLEABLE.

Hanging Rock....... P ton. \$40.00 @ 45.00—4 mos. Southern and Western Brands 35.00 @ 40.00—4 mos.

CHATTANOOGA.

Mr. S. B. Lowe, under date of Dec. 4, reports as follows: Iron has been quite active during the past week, and shipments have aggregated a little over 800 tons. No changes to note in prices :

COKE.		
No. 1 Foundry, extra	22.00 @ 20.00 @ 17.50 @ 16.00 @ 15.25 @	21.00 18.50 16.50
HOT BLAST CHARCOAL.		
No. 1 Foundry, extra	22·00 @ 20·00 @ 18·00 @ 17·0J @ 15·00 @	21:50 19:00 17:50
COLD BLAST CHARCOAL.		
Forge Metal. Cast Scrap, Heavyper ton, Cast Scrap, Light Old Car Wheels Old Rails	\$2.00 @	20.00 15.00 10.00 19.00 18.50
cent. per ton	1.80 @	1.95

BALTIMORE.

Messrs. WYETH & BROTHER, Iron and Steel Messrs. Werth & Brother, from and Steel merchants, 46 and 48 South Charles street, report us the following prices under date of Dec. 5: Trade for the past week has ruled dull and depressed, but this is the season when business may be looked for to relapse into a condition of comparative stagnation, though values do not appear to suffer from the same. We quote the market quiet, with unchanged list:

AMERICAN REFINED BAR IRON.

Messrs. R. C. Hoffman & Co., Iron and commission merchants, Nos. 23 and 25 South Frederick street, report the Pig Iron market as follows, under date of Dec. 5: The Iron market remains dull and unchanged, with small sales at about quotations:

Baltimore (har	204	úl.							 		. 4	129	9	00	0	35.00
Virginia	66			 									2	3	00	0	33.00
Anthracite	No.	1.			 					 			25	2	00	0	24.00
96	No.	2.											2	0	.00	60	22.00
54	No.	3.											19	9	:00	0	20.00
White and																	

FOREIGN.

FRANCE.

FRANCE,

(Moniteer des Interest Materiels).

PARIS, Nov. 19, 1876.—Metals.—Business has become lees active, owing to the early advent of winter, which has interfered with dealings in many directions. Copper.—Statistically the aspect is not unfavorable, there being a reduction in the stock at Havre of 450 tons, but the amount afloat has increased some 2300 tons, part of which will, however, go direct to smelters. We have been steady here at the following quotations: Chill Bare, deliverable at Havre, 207:50 francs; Common do., 902:50; Ingots, 207:50, and Pure Corocoro Ore, 200. Marsellies has remained fairly active, and quotations are Ingots, 207-50, and Pure Corocoro Ore, 200. Marseilles has remained fairly active, and quotations are sasts/ined as follows: Spanish, in slabs, 185; Red Tokat, 190; Small refined Ingots, 190; Sheathing, 230; Bolts, 235; and Yellow Metal Sheathing, 210. The Continental markets, including our own, have become less lively in view of the approaching auction to be held by the Netherland Trading Society. Rates, in spite of the little transpiring, continue to be tolerably well upheld, as follows: Banca, deliverable at Havre or Paris, 202-250 frances; Straits, 200, and English at Havre or Romen, 300. Marseilles firm as follows: Banca, 205; Straits, 105 to 200; Billiton, 195 to 200; and English Refined, 205. Lead.—We have been uniform here at 51 francs, while Marseilles has been firm at 52. Spetter.—The metal has been inactive but unchanged at 58'50 to 39 francs. Fron.—The market has been quiet and rates have not varied. Here at Paris an improvement is not unlikely, on account of the great firmness of larger holders and the position in which consumers find themselves placed, since they cannot well delay their orders much longer.

BELGIUM.

BRIGIUM.

(Revue Universelle).

BRUSSELS, Nov. 19, 1876.—From.—The Belgian markets still lack activity, and great efforts have to be made by holders in order to sustain prices where they are. Some of our works have for some time pest made strenuous exertions to obtain work enough for the winter months, and have succeeded in doing so. Others have only succeeded in procuring orders to keep them busy for a month or two, and this at rates barely remunerative. Some mannfacturers have united in a sort of syndicate to enable them to appear to better advantage in foreign countries for any adjudications that may be coming up; especially the rolling mills.

(Borsenhalle).

(Boresnade).

Hamburg, Nov. 18, 1876.—Metals.—Purchasers have continued in the market to a moderate extent. They have been but little influenced by the breakdown in England, which they look upon as being merely of a temporary nature. Copper has retained its strength at Berlin within the range of 79 to 83 marks for English and Australian, Mansfield remaining at 85 50 to 86. At Stettin, English is firm at 85 to

93. Our own market has experienced no further fluctuations, and we still quote Minnesota 105 marks; brouthelm, 88, and Best Selected, 83. In The agood current of business has been reported, but rates fairly sustained. We quote as follows: Bancs, at Berlin, 80:50 to 81 marks; and English, 78:50 to 79; here, Banca, 73 to 80; English Refined, 81 to 83, Lead.—Berlin quotes Tarnowitz, Hartzand Saxonian as heretofore, 21:75 to 22 marks. At Stettin, German commands 21 to 23, and Spanish, 26 to 27. We are firm here as follows: German, 22 to 22:50 marks; English, 23:50 to 24:50 to 25:50 spanish Prg. 25:50. Speller.—In sympathy with the English market, rather a better feeling is noticeable among us. We quote Silesian 22:75 to 23:75, at which it closes firmly, while Stettin remains well sustained within the range of 23 to 25:50, as to brand, and here, on the spot, 23:50; and to arrive, 24.

HOLLAND.

(Koch & Flierboom).

ROTTERDAM, Nov. 22, 1876.— The is dull. Banca, on the spot, has from 47% dechmed to 46, while deliveries from the impending auction have ranged between 45% and 48. Biliton, to arrive, sold at 45%, 45% and 44% guilders.

CHINA.

Arnhold, Karberg & Co
CANTON, Oct. 11, 1876.—Quickeilver.—Prices have repeatedly fluctuated. Sales have been reported a few days ago at \$58 per picul, but at the close the tendency is again in the favor of buyers, and the inquiry is anything but lively. Total sales during the formight, 245 flasks English and 2.00 Californin; together, 3145 flasks. Quotation, \$65.50 to \$67 per picul.

EAST INDIES.

(Dumnler & Co.)

BATAVIA, October 13, 1876.— Tin.—Of Billiton 10,111-99 piculs were sold publicly on the 9th instant, at an average of 44 99 guilders per picul, equal at the Exchange of 1170 guilders to £70. 37 per ton, cost freight and insurance, per steamer to Holland, but exclusive of commission, The next sale will take place on the 11th of December.

(Aitken, Spence & Co.)

COLOMBO, October 27, 1876.—Plumbago.—Market very barely supplied, and desiers decline to contract for forward delivery, as they look for higher prices later on. (Gillfillan, Wood & Co.)

Singapors, Gillfillan, Wood & Co.)

Singapors, Oct. 25, 1876.—Tin advanced to \$21.75 per picul, but the course of exchange having been unfavorable, it declined to \$21.25 per picul, at which purchases could be made to-day, but not in quantity, supplies being moderate and generally held for higher prices. In Penang supplies have been moderate and prices have declined to \$20.02% per picul. During the next two months the production is expected to increase. For New York the Calcutta has been fixed at 50/ for light cargo, and the Unison has been laid on for the same port at 37.6 for dead weight, and 50/ for light cargo. There is at present no vessel on the berth for Boston, but a moderate quantity of cargo is offering. The Glenartney sails to-day for New York direct, and takes about 155 tons Tin. Exchange has advanced to 4.0% d. to 4/1d. for 6 months' sight, Credit Draft on London. Dollars are scarce.

Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

> (From our Regular Correspondent.) SHEFFIELD, ENG., Nov. 20, 1876. THE CRISIS

in the East of Europe is still what one may term rampant, albeit for the time being the fears of immediate war are not quite so apparent, owing to the fact that at the eleventh hour all the powers have agreed to the conference, and have dispatched their representatives to the meeting place at Constanticople. The Marquis of Salis bury left London this morning as the the pleni-potentiary of Great Britain. He is a man of singular strength of mind, and in his knowledge of men, manners and politics he has hardly an equal in this country. He is said to be especially well posted up in everything relating to India, and should, therefore, be able to poise all that comes before the conference in an equitable manner so far as he thinks the "Brightest Jewel in the British Crown" may be affected thereby. The Marquis, although nearly as old as Lorl Derby (Foreign Minister), is the son inlaw of the latter, Lord Derby having married the Dowager Marchioness of Salisbury within the past five or six years. Pending the siting, and the general result of the conference, all the chief powers are quietly, yet effectively, preparing their armaments on a war footing. The preparations of Russia are of the most formidable nature, and Turkey is following suit with an energy that is commendable on the part of the Sick Man. Austria, necessarily divided in opinion by reason of her Sclav and German elements, is now alleged to be veering round to the support of Great Britain, and Italy is not quite so pro-Russian as she was a month back. Germany is so exceedingly undemonstrative that people suspect a hidden motive, and would not be by any means surprised to learn that there is a secret treaty between the Prussian Eagle and the Russian Bear, whereby both those nations "sympathize" with a nearly and to the corporation.

How there has long been a great divergence of opinion as to whether or not the corduct of city or town gas works is most striated the country them hads of companies or of the minicipalities themselves. About half the large towns are supplied in either way, and if the results of corporation management at Manchestary and results of corporation on management at Manchestary and results of corporation management at Manchestary and results of corporation management at Manchestary and results of corporation management at Manchestary an equal in this country. He is said to be especially Russian Bear, whereby both those nations corporation. "sympathize" with each other.

as you will readily conclude, does not, and is not at all likely to improve in the face of such a gloomy political outlook. It very possibly might not have attered for the better had the times been pacific piping times of peace, but now that there are so many rumors of wars one can bardly find reason for surprise in the fact. The iron industries for instance remain excessively quiet, and in hardwares the business is mostly on home or colonial account.

THE EBBW VALE COMPANY.

LOCKOUT IN LANCASHIRE.

The Central Committee of the North and Northeast Lancashire Coutton Spinners' and ward reading and manufacturers' Association have resolved to lock out all their men, numbering about 60,000, who are now partially out on strike, unless all return to work to-Loctorow.

FURTHER FAILURES continue to occur, some of those during the past week having been of rather serious accoment. At Nottlugham, where the lace trade is in an extremely disordered condition. Backets

The STATE OF TRADE, as you will readily conclude, does not, and is not at all likely to improve in the face of such a gloomy political outlook. It very possibly an ight not have attered for the better had the times been peacific plping times of peace, but now that there are so many rumors of wars one can hardly find reason for surprise in the fact. The iron industries for instance remain excessively queet, and in excessively queet, and in excessively queet, and in extremely disordered condition.

THE EBBW VALE COMPANY.

At a special meeting of the proprietors of this which may been of rather serious accompany, held in Mancheset on Fall Van's working was presented. That document stated that of the authorized new issue of £250,000 in 6 per cent. debentures, a first issue of £250,000 had been taken up and arrangements made for the further £50,000 required next March. The total mortgage debt of the company now stood at £472,800, making the total inductions of the concern £597,600.

At further outlay of £00,000 was required on the control of the company now stood at £472,800, making the total inductions of the concern £597,600.

At further outlay of £00,000 for a steel works—now in progress. The meeting adopted the report, the being stated by the directors that the fuller report, which would show that their workings were in a highly satisfactory condition.

But the condition of the control of the proprietors of the control of the company now stood at £472,800, making the total inductions at the fuller report, which would show that their workings were in a highly satisfactory condition.

But the condition of the proprietors of the control of the full o

makers are prepared to build solid from ships with excavations for the hold, and other burrowing places for the crew.

MECHANICAL PUDDLING.

At a meeting last week of the Mill and Forge Managers' Association, of South Staffordshire and East Worcestershire, Mr. John Lester, the secretary, read a paper on "The Present and Future of the Iron Trade," in the course of which be remarked that the mechanical rabble had done something toward minimizing the puddlers' toil, and where it was applied to double furnaces there was not only a reduction of labor, but likewise a saving of fuel and fettling, and there was a greater yield. Rabbling machines were now being extensively adopted in the North of Eagland, and to some extent were in use of South Staffordshire. Wherever they were applied they were in favor by the were in use of South Staffordshire. Wherever they were applied they were in favor by the men. Melting, dropping and balling had still to be done by the workman. Consequently, to puddle wholly by machinery was not only attempted, but had been effected. Hinstrative of what is now being done with machine puddling by Messrs. Hopkins, Gilkes & Co., Mr. Lester showed specimens of "best best" iron of the class made from valuable mixtures of pigs in South Staffordshire in the hand furnace, but by the revolving furnace from Cleveland pigs alone. The specimens consisted of small sized angle iron, which, tested hot, had been split, a portion of it into three branches; and these branches worked—one into an auger, another into a horseshoe, and the third into a horse nail, while the ram's horn and the punching tests had also been applied. The result was irreproachable. No less so was declared to be the cold test, as applied to a section of 1½ inch square bar, which the meeting concurred with the author would bear a tensile strain of 27 tons to the square inch.

We quote:

No. 1. No. 3.

G. M. B., at Glasgow.

Squarele,

G. M. B., at Glasgow.

Squarele,

Squarele

the author would bear a tensile strain of 27 tons to the square inch.

A third specimen was a section of homogeneous double-headed rail, 82 lbs. to the yard, such as are being now supplied by the firm to the Northeastern Railway Company, and in producing slabs for which all Messrs. Hopkins, Gilkes & Co.'s seven Danks furnares are this week being employed. This, Mr. Lester said, was the class of rail of which Mr. Gilkes, at the Leeds meeting of the Iron and Steal Institu was the class of rail of which Mr. Gilkes, at the Leeds meeting of the Iron and Steel Institute, remarked "he should not like to say were equal to steel, but which he should not like to say were anything short of that." The meeting pronounced the fracture of this rail section to be similar to that of cast steel. In the discussion which followed testimony was borne to the excellent effect upon the quality of the iron produced by all descriptions of mechanical help in the puddling process.

of mechanical help in the puddling process.

Mr. Beards (Darlaston Steel and Iron Company) of mechanical help in the puddling process. Mr. Beards (Darlaston Steel and Iron Company) said that if any accident having happened to their mechanical rabbles, they attempted to use in deep stamping sheets which had been made from hand rabbled iron, unsuccess was almost invariable. Mr. Hughes (Earl Dudley's Round Oak Works) informed the meeting that Mr. Smith Casson's double furnace upon the Casson-Dormoy principle, worked by a machine rabble, and heated with gas, was working admirably, yielding, under the care of two men and a boy, 3 tons 10 cwt. per turn, or 36 tons 6 cwt. per week. The opinion was ventured whether, with similar fettling to that used by Hopkins, Gilkes & Co., similar results might not be obtained by hand puddling; but when what, in the manufacture of special fettling had been aforetime done in South Staffordshire was recalled, as it was by several spekers, the conclusion arrived at was that the palm must be yielded to machine puddling. The chairman and other speakers admitted the excellent. be yielded to machine puddling. The chair-man and other speakers admitted the excellent man and other speakers admitted the excelent results which had been obtained by the rotary puddler; but the chairman said that he was at Leeds, and heard both Mr. Heath (North Staf-fordshire) and Mr. Gilkes admit that it would not pay to take down existing plant and erect the Danks machinery.

CITY GAS WORKS.

4. M. B., at	Olaser	1357		No. 1, 59 6	No.3.
Gartsherrie,	3.0				57/6
	0.0				59/
Coltness,				71/	597
summerlee,	9.6				587
Langloan,	0.6				58/6
'arnbioe,	4.6				58/
Caider, at Po	er Dun	das		66	58/6
Glengarnock	at Ar	rossat	1	657	59/
Eglinton.	35				57/6
Dalmellingto	D. 15				57/6
Shotts, at Le	ith			65/6	597
Kinnetl at I	lo'uess			59/	55/
34 7		CX	0 50		0.07

	Coastwise.	Oversea.	
Year.	Tons.	Tons.	Total tons.
1800		125,840	1,550,991
1810	1,675,592	45,733	1,721,325
1820	2.004,759	118,788	2,123,547
1830	2,167,355	197,308	2,364,668
1840	2.281,343	593,911	2,875,254
1850	2,512,248	1,293,385	3,805,633
1860	2,341,538	2,269,421	4,610,959
1870		3.603,000	6,187,407
1875	2,873,307	4,214,513	7,117,820

has just been taken by the Durham Miners' Association, a body frequently troubled by the rebellion of its constituents. In conjunction with the coal owners of the district it with the coal owners of the district it has appointed a county court judge, who has the confidence of both parties, at a salary of £300 per annum, to hear and decide any disputes which may occur between the masters and men, thus saving the cost and bad feelings engendered by strikes or lockouts.

TRADES OF SHEFFIELD.

TRADES OF SHEFFIELD.

The alarm which exists as to the condition of Eastern affairs is one principal cause which is tending to keep all business transactions within the narrowest possible groove, and there does not appear to be any immediate prospect of relief. With what must under any circumstances be a most formidable contest staring us in the face, supposing diplomacy to prove unequal to the task of securing peace, it will be no matter for wonder if the current depression becomes even deeper than at present as the end of the year approaches.

In many branches of the iron trade, however, there cannot well be a more pronounced duliness than that now existing, the complaints of the firms engaged therein being this week louder than ever, particularly from those whose

the firms engaged therein being this week louder than ever, particularly from those whose attention is devoted to the rolling of merchant iron. An ordinary bar is selling at materially below £6, 15/ in the Lancashire markets, in competition with the local and North Stafford-shire products of corresponding qualities. At such a price there cannot be any real margin of profit, hence one hears repeated asseverations that the trade shall be allowed to lapse for the time being—a resolution only devlated from because it is found to be rather less ruinous to work without profit than allow the machinery to be laid off. In the departments devoted to the manufacture of constructive iron work and special foundry goods, there is, perhaps, a to be laid off. In the departments devoted to the manufacture of constructive iron work and special foundry goods, there is, perhaps, a rather more cheerful outlook. At the Thorn-cliffe Works, for instance, it is expected that a good deal of work will shortly be done on account of the new Manchester gas works, the firm being the only ga-plant macufacturers who sent in a tender and plans—the latter receiving the third prize.

As to pig from of any kind little can be said that is new. As I have mentioned on recent occasions, there is a fair quantity of North-ampronshire and Lincolnshire ores used in the district, the product being quoted at about £2. 15/ to £2. 17/6 per ton for ordinary sorts. Other pigs having a large admixture of local blackband ores naturally command better figures. Hematites are steady at the figures recently quoted.

ures. Hematites are steady at the figures re-ceetly quoted.

In Bessemer steel there is a moderately good,

In Bessemer steel there is a moderately good, ableit irregular, amount of business in hand—there being a tolerable inquiry for blooms and forgings, as well as for the material in a more finished condition, or as scrap, for cutlery uses. The rail mills are, as heretofore, irregularly engaged. I hear, however, that one of the largest concerns in the town has orders on its books which will take nearly three months to run off. In other directions the make is slack-ening, and two or three mills are wholly laid off. Quotations are not far from £7 per ton. There is a wonderful difference between such prices as this and those which obtained when Bessemer steel ralls were first put into the market. The drop could hardly have been foretold.

75,725 tons in September, the augmentation being chiefly from Thorneliffe. Wharneliffe, Daifield and other large pits. West Yorkshire, too, sent a large quantity. The Midland, as usual, was mostly supplied by the Derbyshire collieries, thirteen of the chief of which alone sent fully 130,000 tons to the metropolls. Clay Cross, Langley and Tibshelf each send 1000 tons off daily. The North Western draws its coal from the Wigan and Cannock Chase fields, and the Great Eastern is necessarily supplied over the Great Northern and Midland. The Great Western, as is above shown, is now becoming one of our leading coal conveying systems. In cuttery, the leading huses are still doing a moderate amount of business, chiefly on best table and spring cuttery.

table and spring cutlery.

FUTURE PROSPECTS OF SHEFFIELD.

returne prospects of sheffield.

At a banquet given here on Friday night, Mr. Mark Firth (head of the great steel firm of Thomas Firth & Sons), spoke on the subject of the trade of Sheffield. He said: All in that room knew that the trade of Sheffield was very bad. He had not known it so bad for 25 years with so long continuance. Sheffield had during the last few years had a great time of prosperity, no town, he believed, having had such a prosperous time. He had known for the last 25 years several times of panic, which had occurred at nine or ten years' interval. Trade had been bad for a time from contemporary causes, such as overtrading, and overtrading by which trade got spoiled. But it recovered itself in time, and, therefore, he believed that not only Sheffield but England would recover from the present depression of trade, as had hitherto been the case. He must, however, say that he believed that the trade of Sheffield had arrived at a maximum, and he would tell them why. If they looked around the continent, Germany, France, Belgium and other countries had commenced to manufacture goods which they had bitherto received from Sheffield. England once had the supplying with iron and steel of almost every part of Europe, but such was not now the case. Their friends across the Atlantic, who were pretty sharp—and he did not say it offensively—had a knack of protecting and looking after themselves. He did not hesitate to say in public that the Americans in that respect had acted in an extremely selfish manner. The markets of England, her Colonies, and India were open to American and other manufactures, whereas, on the other hand, Sheffield goods and English England, her Colonies, and India were open to American and other manufactures, whereas, on the other hand, Sheffield goods and English goods sent to America were taxed at a rate exceeding almost the tariffs of every other part of Europe. America, moreover, was now making steel, cutlery, saws, tools and other articles she had been wont to have from Sheffield. There was, however, another thing to be looked at, America would not only supply herself with these things, but would also become our competitors in the markets in Sheffield, in our Colonies and in the American markets. That was what made him think that we had come to the climax of trade as regarded the American markets, at all events.

There no doubt would be a great increase in Sheffield trade, but not in the same proportion

There no doubt would be a great increase in Sheffield trade, but not in the same proportion as in the past. What then had we to look forward to in the increase of the trade of Sheffield? Not an increase with the trade to America, but, notwithstanding that, he did not for a moment mean to say that the present stagnation would last—but he believed we should never regain the position we once held with regard to the Sheffield markets. He must, however, be permitted to say, in conclusion, that he felt grieved that America should charge the extraordinary tariffs it did to English manufactures when the English markets were free afactures when the English markets were free

Dr. Webster, the American Consul also spoke, saying that he had come to feel at home in Shaffield, and if ever the time came when he should be called to break the tites and friend-ships that bound him here he should break those ties with very great regret. He had lived in this town long enough to have broken somewhat many ties that he once had across the water. He alluded to the generous manner in which Sheffield had responded to the call which water. He alluded to the generous manner in which Sheffield had responded to the call which came across the water from Chicago when the great fire occurred, and he said that the generosity of the town had been much appreciated by the Americans. In regard to the trade of Sheffield, all present knew that at present it was very bad. In 1872-'3-'4 trade might almost have been said to have been at fever point, and a reaction was necessarily to be looked for. He hoped, however, that ere long trade—especially with America—would increase, and that a time of great prosperity was before the town. of great prosperity was before the town

BIRMINGHAM AND STAFFORDSHIRE

continue to grumble amazingly at the dullness which pervades almost every branch of the fron trade, the only departments transacting any business worth naming being the founders, the business worth naming being the founders, the safe makers and the metallic bedstead manufacturers, albeit in one or two directions there is a fair inquiry for galvanized iron and stamping sheets. All merchant irons are neglected, "iist" prices meantime being but a delusion and a snare. The hardware industries are tolerably well engaged all round, principally on home and Colonial account.

SOUTH WALES.

THE METAL MARKETS

Iron: f. o. b. in Li	very	ool,	per to	72.		
	42	8.	đ.	£	8.	6
Merchant bar	- 6	15	0.20	6	17	
Merchant bar, in Wales	6	5	0 60	6	7	
Staffordshire	7	5	00	9	15	
Hoop	8	0	00	9	0	
Sheet		- 5	00	10	0	
Nail rod	7	5	00	8		
Bar, best crown	7	5	00	-8	0	
Boiler plates	9	5	00	10	10	
Tin Plates; f. o. b. in	Liv	erpo	ol, per	box	r.	
	£	8.	d.	£	8.	d
Charcoal, I. C	1	4	00	1	6	
Coke, I. C		19	60	1	1	
Copper: Delivered in .			d, per	ton		
	£	В.	d.	£	8.	1
Bolt and Sheathing	92	0	00	0	0	1
Tile	85	0	00	0	0	1
Tough cake		0	00	0	0	-
Best selected	87	0	00	0	0	-

Messrs. Harrington, Horan & Co. (Liverpool, Nov. 16th) thus report on copper: The active demand for copper was considerably stimulated by important purchases of furnace material, made by the English smelters, and altogether an unusually large business has been done in burs for the trade, and on speculative s altogether an unusually large business has been done in burs for the trade, and on speculative account. During the fortnight the transactions comprise about 6500 tons Chili bars at £76. 10/t to £79 per ton. One cargo Bolivian ore and regulus combined, at 15/7½ per unit; one cargo Chili regulus at 15/9 two cargoes Chili ore at 15/8 and 15/9 per unit respectively; eight cargoes Chili regulus at 16/, and about 3000 tons Californian ore at 15/8 to 15/7½ per unit. Bestee the above, large contracts have been entered into for copper precipitate, at prices based on monthly sales of Cape ore and Chili regulus. Chili copper charters for the second fortinght of October, were 2900 tons fine copper, composed of 1600 tons bars for the Continent, 700 tons bars and 600 tons ore and regulus for England. At the Swansea sale, by tender, on the 7th instant, 1442 tons ore, average produce 17 13-16 per cent., realized 16/per unit. The Cape ore sold at 16/2½ per unit. Yesterday the smelters officially advanced their prices to £92 per ton for strong copper. Today there is a payer in the degree of the prices to £92 per ton for strong copper. prices to £92 per ton for strong copper. To-day there is a pause in the demand for bars, and prices have receded about 20/per ton from the highest point touched. Quotations are: To Day.

Chili bars	£78 to £79 £85	£82 to £83. 10/ £90	
" ore and regulus.	15/9 to 16/	16/6 to 17/1%	
rilla	17/	18/3	
Chili bars ingots	Nov. 15, 1874. £88 to £90 £99	Nov. 15, 1873. £82 to £86 £95	
regulus. Corocoro Ba-	17/ to 17/6 18/6	15/6 to 16/ 17/6	
ARRIVALS HER	E DURING THE COAST S. A. PR	FORTNIGHT OF	
"Illemani," from At Swansea-	Nil:		
Stocks of Co	nnor (Chillen	and Rollwinn in	١

At Swansea—N Stocks of Cop first and second I we estimate at:	per (C	hilian and likely to	d Boliv	vian) in railable,
		Regulus.	Bars.	Ingots.
Liverpool Swansea		2164	8857 2486	166

2968 11.343

681 2988 11,343 166 representing about 12,981 tons fine copper, against 14,649 tons 31st ultimo; against 12,559 tons fine copper November 15, 1875; against 10,900 tons fine copper November 15, 1874; against 21,100 tons fine copper November 15, 1873. Stock of Chill copper in Havre, 7500 tons fine. Stock of Chill copper fined and chartered for to date, 13,000 tons fine. Stock of Foreign copper in London, chiefly Australian, 2693 tons fine.

According to the Board of Trade returns, the total imports and exports into and from this

total imports and exports into and from this country for the first ten months of the follow-

ing years, were :		
IMPORTS.		
1874. Tons. Copper in ores. 10,883 Copper in regulas 10,883 Bars, cakes and ingots 33,651 In pyrites, estimated 11,081	1875. Tons. 6,819 12,605 34,718 11,723	1876. Tons. 9,388 10,944 31,920 11,447
Total60,898	65,865	63,699
EXPORTS.		
1874. Tons.	1875. Tons.	1876. Tons.
and unwrought	19,066 12,190 11,695	18,763 14,842 10,464
Total51,950	42,951	44,069

Tin.—Market quiet at £78 for Straits, £77 for Australian, £80 for British, and £65 to £68 for Peruvian as in quality. Lead.—Market firm at £22. 15/ for ordinary shipping brands, and £22. 5/ for Spanish without sliver. Spelter.—Market firm at £22. 15/ to £23 for ordinary Silesian brands.

naces.

The total shipments of iron from all Welsh ports for the ten months of this year has been 56,777 tons. October contributing 3173 tons. During October the fuel (coal) shipments from the same ports were 418,164 tons, of which 14,000 went to Singapore, 20,172 to Malta, 150,000 to French ports and 15,495 to Constantinople. Under 9000 tons went to Odessa. At the iron works there is very little work doing, but Dowlais is now likely to be a little busier, having secured a fair-sized steel rail order. several forms of apparatus for indicating variahave declined somewhat, except lead, owing to tions of high temperatures has rendered the of old rails is the difficulty of getting them into have declined somewhat, except lead, owing to the political crists.

Von Dadelezen & North say: "Copper.—
Foreign easier. Chiff bars have been soid from \$270 to £77. 15/, both on the spot and to arrive, the range of variation of the instruments on either side of the true point being so great as to render an approximation of temperature almost as easy without as with their use. Mr. Edward Brown, of Philadelphia, Pa., a thorochases can be made in the market below this. Tin.—Straits, after advancing to £79, bus rapidly declined, and the last quotation is £76 to £78 to 10/. Australian touched £77, 10/, and has declined to £76. The main business was at £76 to £76 to 10/. Australian touched £77, 10/, and has declined to £76. The main business was at £76 to \$270 to 10/2 and the same could be applied to the utilization of old rails is the difficulty of getting them into operation but little better than guess work, the range of variation of the instruments on either side of the true point being so great as to render an approximation of temperature almost as easy without as with their use. Mr. Edward Brown, of Philadelphia, Pa., a thorochase can be made in the market below this. Tin.—Straits, after advancing to £79, has rapidly declined to £76. The main business was at £76 to \$270 to the construction and introduction of a pyrometer of a reliable and durable character, whose declined to £76. The main business was at £76 to £77 during the upward move. Banca in Holland has fluctuated violently. It advanced from 466, to 486, and fell to 45½6, closing at 60½6, billiton, 45½6, and fell to 45½6, closing at 60½6, billiton, 45½6, and fell to 45½6, closing at 60½6, billiton, 45½6, billiton, 45½6, closing at 60½6, billiton, 45½6, and fell to 45½6, closing at 60½6, billiton, 45½6, billiton, 45½6, closing at 60½6, billiton, 45½6, billiton, 45½6, closing at 60½6, billiton, 45½6, billiton, 45½6, closing at 60½6, billiton, 45½6, closing at 60½6, billiton, 45½6, billiton, 45½6, closing at 60½6, closing at 60½6, billiton, 45½6, closing at 60½6, b eter of a reliable and durable character, whose utilization of old rails. The first is by rolling

fects, and so long as we have an instrument by several passes an oblong, flat bar. means of which we can tell when such temment, thus giving us an approximate standard, instrument under notice is composed of a stem stem is made of wrought iron tubing, to which ease, and about 6 inches below the latter, a flange or collar. The lower or free end of the are afterward straightened. tube is closed by welding a plug therein. bar of plumbago fills the interior of the tube, movement longitudinally, and is attached at the lower end to the plug, while the upper end conthe index is operated. The operation may be explained in a few words. The stem of the inbe used, and as the temperature rises the tube rod connecting the end of the tube with the index of the same material as the tube, it would, lengthening upward as much as the latter receded, and thus there would be no indication Nov. 15, 1875. of expansion by the index. But as plumbago be applied, it is used to form the connection remains of the same length, any variation in index. The only deterioration of the instrument is in that portion of the tube which is exposed to the heat; but even this is not to any worn out may be replaced at little expense or trouble. A very excellent feature of these inthat it may be true at atmospheric temperature by comparison with the thermometer, or, as often happens, in case it is desired to keep secret the temperature used in any operation, it may be set 100° or 200° either side of the true point, and allowance made for the variation in calculating the temperature. In addition to the above, Mr. Brown has designed a portable pyrometer for use as a standard in regulating those which are constantly in use, thus affording a check upon the latter and preventing the possibility of any variation being unnoticed or neglected for any considerable time. Another very excellent instrument included in Mr. Brown's Centennial exhibit was a mercurial revolution indicator, a very accurate and reliable instrument for determining the speed of engines, shafts, &c., &c. It attracted much attention from scientific men, particularly the representatives of several of the technological schools and colleges of Europe, all of whom purchased specimens for their respective insti-

The Utilization of Old Steel Rails.

One of the most serious problems that con fronts the Bessemer steel industry, is the utilization of old rails. The crop ends produced in the manufacture of rails have been a burden, and it has hardly been possible to dispose of these The uses to which Bessemer has been put, other than in rails, has been scarcely sufficient to utilize these crop ends, and though a vast amount of thought and experiment and time Improved Pyrometer for Blast Fur- has been spent in seeking other uses, and in many cases with success, we can scarcely believe the demand for these purposes for years In the management of smelting furnaces for will be large enough to make much of a mar-

The great obstacle to the more extended use

certain ratio of expansion for a degree of heat, roll through the roll, so that a line from the thought that the continuance of one mark generally based upon some point below the head to the flange through the web will not duty on every hundred weight of iron will not boiling of mercury. Practically considered, form a right angle with the axis of the rolls, be a means of raising it. German iron industry however, this is of no consequence. We know the rolls will squeeze it on all four sides of the has grown to such an extent that it cannot that certain temperatures produce certain ef- rail, reducing its diameter and giving after subsist except by the export of enormous quan-

various forms and modifications of the instru- ter. The machine in use at Swett's, in Syracuse, is somewhat different. It consists of two rolls which might arise to German industry by new that of a true ascending mercurial scale. The Each roll has two chilled cutting edges the duty planned by other countries (the governlength of the web apart, those of one being ment will act in this direction when the reand a circular dial, similar in all respects to that exactly opposite the corresponding ones in the newal of the commercial treaties take place), of an ordinary pressure or vacuum gauge. The other, and the circumferences one-sixteenth of arc, it is generally believed here, intended as a an inch spart. The rail is fed to the rolls and warning to the Austro-Hungarian governis attached, by means of a screw nipple, the dial is scored so deep at the head and flange as to ment." separate in most cases into thin pieces, which

The Sherman Puddling Process.-We leaving only sufficient space to allow of free find the following in the Journal of the Iron and Steel Institute: After the numerous experiments made in England, with altogether neganects with the segment gear by means of which tive results, we do not expect to hear more about this process, especially as at the meeting of the Societe de l'Industrie Minerale, strument being introduced, as far as the flange, of the 1st April this year, M. Euverte cominto the hot blast or wherever it is desired to municated the results of the experiments made with this process, and the conclusion which he expands a certain fraction of an inch for each arrived at was that it did not appear to have assumed degree of the scale. Now, were the any influence on the quality of the steel, and was not worthy of further consideration by metallurgists. The president of the meeting, of course, compensate for this expansion by M. de Cizancourt, however, protested against these conclusions, declaring that at M. Verdie's Iron Works there had already been more than 1200 tons of metal containing phosphorus is known to expand very slightly with any tem- treated by this process with complete success; perature to which this form of instrument can and at the subsequent meeting of the society. M. E. Verdie read a communication in reply to between the moving end of the stem and the the paper of M. Euverte, to the effect that the index, and, as a matter of course, as it always results obtained by using the Sherman process at the Firminy Iron Works proved that, even that of the tube must be communicated to the when the amount of phosphorus present was greater than at Terre Noire, the steel produced was more carbureted, purer, contained less phosphorus, and was made at a lower price. serious extent, as at a temperature of 1200° a M. Verdie admitted that the reagents employed tube will last from 8 to 12 months, and when did not consist only of the 30 grammes iodide of potassium, but were alkaline salts in the proportion of two kilogs. per charge, the struments is a screw for adjusting the index, so iodide included, which is, therefore, not exactly the same as specified in Sherman's pat

> The German Tariff on Iron .- The Secre tary of the British Iron Trade Association is informed by the Foreign Office that Her Majesty's Ambassador at Berlin reports there is good reason to believe that there will be no change with respect to the proposed abolition of existing duties on iron entering Germany, and that these duties will consequently cease on January 1st. On this subject the German correspondent of the Economist says: "The most important news reaching us from Berlin is the Ministry's declaration to pronounce itself decidedly in favor of not putting off the abolition of duty on iron on any consideration. It is true that German steel manufacturing is at present in a very low state, but it is generally

tities to foreign countries, and this can only be For slitting rails there are two machines in the case when quality is first rate and prices perature is reached, it is of little importance to use. One we illustrated in our issue of No- are moderate. The words contained in the the result whether we call it 1200° or 1500°, all vember 2d. This is a cutter acting like a German Emperor's speech at the opening of that is necessary being a uniform rating in the shears, and in principle like the old rail rod slit- Parliament, to the effect that 'the German government intends staving off all danger whose practical value is equal, or nearly so, to shaped so as to take in the roll on its side. arrangements in questions of commerce and

> Canada is beginning an export trade in a small way. A vessel sailed from Montreal the other day laden with Canadian manufactures, mostly of wood and iron, and including furniture, farm implements, steam engines, and many other articles of utility, which have already found a market in Australia. The shipment is understood to be the ploneer of an extensive trade for which arrangements have

Mr. Mundella, a leading British manufacturer and member of Parliament, in a recent address in England, predicted a "pinch" for the working classes there this winter. Next spring, however, he thought would bring better times, the dawn of which he believed he could now distinguish. The world, having used up its surplus stocks of goods, needed fresh supplies, and they must be provided, thus reviving all branches of industry—producing, manufacturing and transporting.

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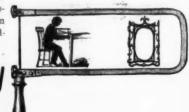
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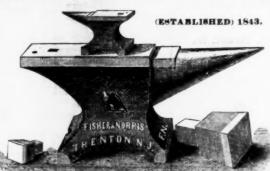
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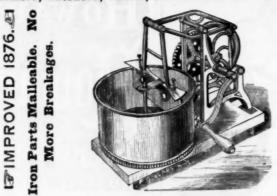




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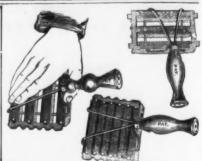
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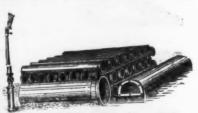
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Hotchkiss' Sons, Bridgeport, Conn Lawrence Curry Comb Co., 52 d Avenue, N. Y. Outlery, Importers of, Boker Hermann & Co., 601 Dnane, N. Y. Boker Hermann & Co., 601 Dnane, N. Y. Clatworthy R. & W., S. Chambers, N. Y. If Friedmann & Lauterlang, it Writs, Friedmann & Lauterlang, it Writs, Horden Gul'erv Co., 40 Chambers, N. Y. Dwen & Cambe I. 220 N. Second, Phila. "Wilson Hawkswortn Ellison & Co., 72 John, N. Y. Wilson Hawkswortn Ellison & Co., 72 John, N. Y. Wilson Hawkswortn Forder Co., 50 Chambers, N. Y. Muller Bros. Cutter Co., 50 Chambers, N. Y. Miller Bros. Cutter Co., 50 Chambers, N. Y. Man Machine Live Co., 50 Chambers, N. Y. N. Y. Daer and Goodnow Mfs. Co., 35 Chambers, N. Y. Daer and Goodnow Mfs. Co., 35 Chambers, N. Y. Daer and Giste Springs. [1] Lawron & Goodnow Mfs. Co., 35 Chambers, N. Y. Daer and Giste Springs. [2] [3] [4] [5] [6] [6] [6] [6] [6] [6] [7] [6] [6
Owen & Cambe I. 22) N. Second, Phils
Huraliansw Aarol. reoperell. Mass 11 John Russell Cultery Co 97 Chambers. N. Y. 40 Miller Bros. Cutlery Co W. Merican. Conn. 40 Naugatuck Cutlery Co 89 Chambers. N. Y. 41 New York Kniff Co Walden N. 41
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The Jams's & Goodnow Mfg. Co. 3s Ch mb/rs. N. Y. Doer and Giate Springs. Quackenbush, Townsend & Co. 3s Reade. N. Y. Van Wagoner & Williams. 82 Boekman, N. Y. 40 Dredging, and Makers of Dredging Machines, Am. Dredging Co., 19.8. Delaware ave., Phila. Drill Chacks. Manufacturers of France & Co., 62 Chatham, N. Y. 83
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Billings & Sneacer Co., Hartford, Conn
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Whittier Machine Co., 1176 Tremont, Boston, Mass
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Moore James cor. 18th and Buttonwood. Phila. 99 Ohl & Huuschid, 57 to 6 Passaic Ave., E. Kewark, N. Steams. Makers of. Austral. & Co., 168 Fulton N Y. 39

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Exvien Chas. W. & Co., Kensington, Phila.
Bartford Foundry and Maching Co., Hartford, Ct., 49

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	Boker Hermann & Co., 101 Duane, N. Y
1	Windmuller Louis & Roelker 20 Reade N. Y 20 Hardware Manufacturers. American Spiral Spring Butt Co 82 Beekman, N. Y. 40
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K	Holden E. J. & Co., 54 Beekman N. W
I i	e Creepers. 6 Gunsalus Thos. Troy. N. Y. 23 surrance, Beiler. 23 surrance deller Inspection and Insurance Co. 20 on Brokers. 20 Sept. 10 S
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1	sounces, noustord & Co., I oungstown, O

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Irons (Tuyere.)
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Lanterns, Manufacturers of.
Diets R. E.. (Tubular) 54 and 56 Fulton, N. Y...... 40

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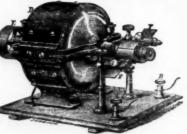
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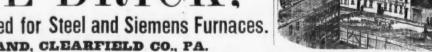
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Woodbridge Fire Clay and Sand,
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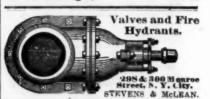
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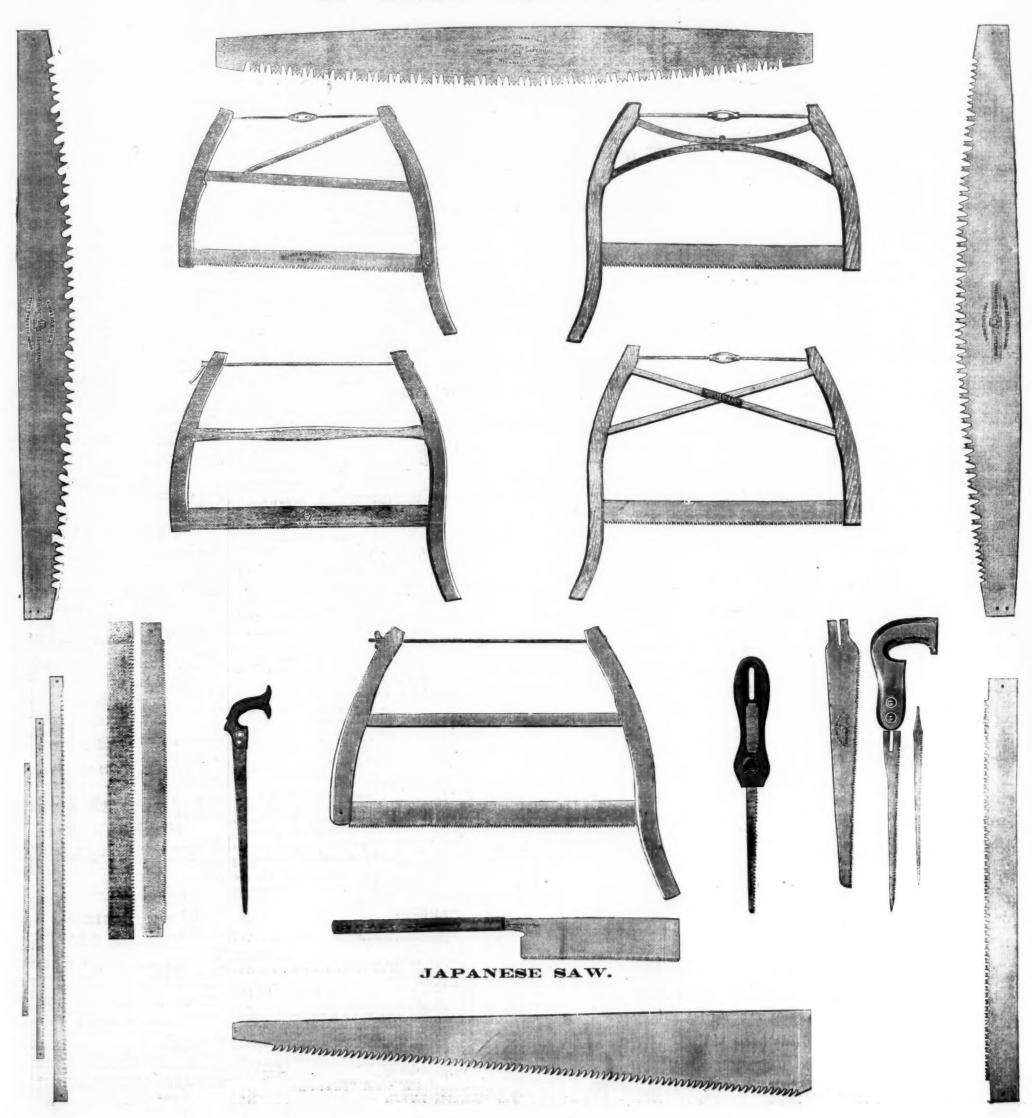
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HARDWARE.	Fast Joint, Naitow	Egg Beaters. 8 in. 10 in. Monroe's 8 in. 10 in.	Rolled Plate. dis 65&10 3 " Raised dis 65&10 5 Wooden bitran and T	Picture Natis and Knobs. dis 60&10 Brass Head
A avtis	Broad Japanned dis 30±10	Monro's Sin. 10 in. dis 10 s	Wrought Strap and T	Picture Natis and Knobs dis 60&10
arla Anvile (American: 38 % 9c dia 30 4	Loose Pin, no Acorn. dis 42% 210 Acorns dis 40& 10 Japanned dis 50& 10 Black Time dis 40& 10	National	Heavy Welded Hook 8 to 12 In., 11 c dis 30 @ 14 in. & up. 94c 40 %	Pinking Irons.
Ash Sifters E. Corning's Barrel Head. dis 10 % lival	Loose Pin, no Acorn	Flour. B Sc. net Enameled and Tinned Ware. Kettles	Hoes. Solid Shank, C. S	Bailev's "Victor" dis :5&:10
Augers and Bits. Conn. Valley Mfg. Co	" " with Iron Acorns dis 80&5 5		Hees. (% in. 11%c)	Onto Tool Co. dis 35 Plane rons, Butcher's \$5 56 to A gold—new lin Buck Bros. \$5 25 to A gold—
	Fast Joint, Narrow	Timed Saucepans	Scovill Pattern dis 10 @ 15 % Lane s C. S. Cresent, American Pattern dis 15 % Scovil Pattern dis 16 % Scovil Pattern dis 16 %	" Auburn Tooi Co.'s. dis 25&10" " Auburn Tooi Co.'s. dis 25 " Greenfield Tool Co. net list Plans Irons, Defiance. new list dis 25
Criswold	Broad Gis 40& t0 3	Fenn's	Scovili Scovili Gis 10 % Hooks. Bird Cage. dis 60&10 @ 70&10 %	D. R. Barton Tool Co
Jennings Bits	Inside Blin: Insight	Frary's Patent Petroleum	Bird Cage	Sandusky Tool Co. dis 10: Plow Bits, Greenfield Tool Co. dis 10: Pliers and Nippers.
Griswas District Bits.	Blind Butts, Parker.	Wood and Metallic dis 49 Wood, Cork Lined. dis 60 Enterprise Mrg. Co. Self-Messuring. dis 20 Fellos: Pintes. # 20 15c: dis 25 Fellos: Pintes. # 20 15c: dis 25 American File Co \$5 00 to Ecurrency—dis 20 Aroute File Works.	" McGill's	Hutton's Fatent Nippers
Blake's small, \$30; large. Parmelee's small, \$30; large. \$36	** Lull & Porter	Arcade File Works. \$500 to & currency Auburn File Works. \$5 00 to & currency C. B. Paul's. \$5 00 to & currency Heller & Bros \$5 00 to & currency		Plumbs and Levels. Stanley R. & L. Co.'s Pat. Adjustable
French, Swift & Co	Garretson	Johnson & Bro	Heading list	Eurema Pilers and Nippers dis 26
Stearing Adjust, w work \$450-418 s0 & Co.	Sargent's dis 70&5&10 9 Can Openers. Meissenger's Comet. per doz \$300 dis 20 9 American per doz \$25 dis 50	J. & Riley Carr 5 00 to & gold	Wrought Staples and Hooks and Staplesdie 75 %	Johnson's Patent Adjustable
Double Cut Gimlet Birs, Shepardson's dis 20 g	Lyman's. per doz 3°75 dis 20 s No. 4. French. per doz 2°25 dis 50 s No. 5. Iron fiancie. per doz 2°25 dis 50 s	Walter Spenesr & Co.'s "Diamond" 4 50 to & gold Spear & Jackson s 5 00 to & gold W. K. & C. Peace's "Imperial" 5 2, to & gold	Grass dis 2 % Whiffletree—Patent dis 45 % Hooks and Eyes—Malleable Iron dis 60&10&10 % Brass dis 60&10&10 %	Judd's Axie per doz \$0.75 dis 40 gi iot House and Tackie dis 50&10 gi fap'd Screw Jap'd Screw dis 60&10 gi fap'd Screw dis 60&10 gi fap'd Screw
Douglass'dis 25c 10 s Ivee'dis 30 s Morse's Bit Stock Drill , List of Jan'y 1, '76dis 25 s L'Hommedieu's Ship Augersdis 20 s	Sprague s	R. 1000tsod.	Herse Nalis. Nos. 5 6 7 5 9 10 Ausable	Pulleys dis 50&10 Pulleys per doz \$0.75 dls 40 Judd's Axle per doz \$0.75 dls 40 foot House and Tackie dis 60&10 Jap'd Screw dis 60&10 Brass Screw dis 60&10 Jap'd Side dis 60&10 Clothes Line dis 60&10 Haw Fork per doz \$4 97 @ 5 00 dis 10 Bay Fork per doz \$4 97 @ 5 00 dis 10 Bay Fork per doz \$4 97 @ 5 00 dis 10 dis 1
Wairous Ship Augers. dis 20 s Yauchan's Post Hole— 6 in. \$25 00; 7, 8 anc. 9 in. \$25 per doz	Cas Openers Per doz \$3-0' dis 20 s	Stube	Hooks and Eyes Malleable From dis 6042104:10 8	Panape. Douglas Cistern, etc. new list dis S. & F. Union Mfg. Co's. Cistern and Pitcher dis S; "Rans dis S5; "Garden Engines dis 20; Punches.
Valuation 1 who at 130 le- 0 in . \$25 per doz	Double Waterproof, 1-4s, \$1'50; 1-10s, \$1'58c., gold Colt's	Mrs. Coles	National, Pointed and Polished, Pat. Fin ' 29c 25c 25c 22c 21c 20c National, Pointed and Polished, Ex. Fin " 30c 27c 25c 24c 38s 22c	" " Rams
Awis, Sewing, Common Der groß \$1'85 - dia 25%; "Best Peter Peg Per groß \$2'50-dis 15 \$ Patent Peg Per groß \$2'50-dis 15 \$ Patent Peg Per groß \$2'50-dis 15 \$ Shouldered Brad Per groß \$2'60-dis 25\$10 \$ Brad Sets, Alken's Per doz \$18'88-dis 40 \$ No. 42, \$10'50 No. 43, \$12'50 dis 56 \$0 \$	Welcome	6 " 3 50 each dis 10 % 6 " 5 60 each dis 10 % Peerless, 4-luch Rolls	Polished " 27c 24c 23c 21c 30c 19c	Punches. Belt or Drive
** No. 42, \$10 50 ; No. 43, \$12 50	Cetton	Telegraph Tele	Blued.	Sliding Door, Wrought Brass W h 40: net " Iron, Fainted W foot 9c-dis 55& 10 g Barn Door, k, and k inch
Blood's per doz \$10 00 @ 11 00 net D. R. Barton Tool Co \$\pi\$ doz \$12 00 net punt's \$\pi\$ dor \$11 50 @ 18 50	Cast Iron, Stee Points. per doz \$2:00 dis 45:65 \$ 4:maters. dis 45:65 \$0 \$ 3ed. dis 45:65 \$0 \$ Plate and Shallow Socket. dis 45:65 \$0 \$ Deep Socket. dis 41:65 \$5	Champion, 6 inch rolls		Casc Steel
Axes. Stood's. Per doz \$10 00 @ 11 00 net D. R. Barton Tool Co. "w doz \$12 00 net nut's Collins". Collins". B. Clark's (J.C. W. & Co.) bron'd or red. W doz \$11 00 Stonnons". W doz 10 00 @ 12 00 net @ dis 5 B. Clark's (J.C. W. & Co.) bron'd or red. W doz \$10, dis 5 B. dis Razor Blade. W doz 9 00 @ 11 00 Stonnons". W doz 10 00 @ 11 50 Menn's W doz 9 00 @ 11 50	Deep Socket. dis 40 s o s o s o s o s o s o s o s o s o s	Defiance4 in., \$3.50; 6 in., \$4.00; 8 in., \$6.50 each net K. F. M., 4½-inch Roll 3 50 each net	FEFEIDS*, Vulcan and Globe 500 lbs dis 5 s. Herwe Sheecs 8 keg. \$462\coloredge R. I. Horse Shoe Co. Ferkins' improved Light, Med. and Heavy \$\coloredge \coloredge \col	8 10 12 14 teets. Malleable
Simboon' \$\psi \text{doz 11 00 } \pi \text{11 10 } \pi 1	Humason, Beckley & Co.'s	6-inch Roll. 4 00 each net Crown 4\(\circ\) in. Roll, \(\frac{83}{5}\); \(\frac{6}{5}\) in., \(\frac{4}{10}\); \(\frac{8}{5}\) in., \(\frac{5}{25}\) each net Domestic Fluter	Med. and Heavy	Razer Straps. Evan's
Jobn Leverett's	₩ b	Fluting Sciesors	Boston Rolling Mills Hand Made Se Se Lee Awis, 4 hisefs, &c. per doz \$6:50 net National its Section of the Section of the Section Sec	Malleable
Axies. Common (Guy C. Hotchkiss, Field & Co.). # B 4%c Soild Collar, Case Hardened, Chiled Box. # B 5c	German Halter Chain by the cask, what gold is a sec German Coli dis 25 % gold German Coli dis 25 % gold Galvanized Pump Chain w b 10% on 11c.	Keystone Portable Forge Co	Novelty Ice Breakers per doz \$6.50, net White's Sliding Head Picks per doz \$2.25, net Duniap s Ring Picks per doz \$3.00, dis \$1.5	Hivese. Iron and Tinned dis 60 @ 65 % In bulk dis 50 %
Axle Grense.—Frazer's & 5 6c. Baiances Light or "Common" dis 25±10 x dis 25 ±10 x	Jack Chain, 1ron	Representation of the Control of the	wood Head Picks, Sargent's per doz 31*85, dis 60&10 % iron per doz 31*85, dis 60&10 % ice Mallets, Pick in Head per doz 31*75 net per doz 31*05 net	Iron and Timed
Bands, - rated new list dis 50&65 5 Fon Rim new list dis 25&65 5 Fon Rim new list dis 25&65 5 Bass (Plated list) new list dis 50 (0&5 5 0 orcide) new list dis 50&65 5	Red. P gross, Stc net Blue. P gross, 95c net White Crayons P gross, 13c net	Burnished, P. S. & W., new list	Ice Axes, Small, Cast or Malleableper dox \$1.50 net Restles. \$7 % 46c net Brass. dis 40 @ 50 %	Rend and Levee Scrapers. D.ty's Revolving. dis 25 % Reds. ms 40&10 %
Gray's Katchet Ø doz \$4 00, dis 15 %	Chieses. D. R. Barton Tool Co. (all kinds)	Enterprise Mfg. Co	Ames' Butcher Knives dis 20 % Shoe dis 15 %	Reilers. dis 354 5
Fland Light Brass Clis 704c54:10 q 75 x	Buck Bros. new inst ons 174 @ 20 % Bark Mig. Co., No 1. dis 60&10&10 & Merrill	Wire. dis 10 % " Smith's Patent. per doz \$18-0, dis 40 % Gimlets. Nail and Spike. dis 25-610% "Bee " Gimjets. per gross \$12-00, dis 45 %	allee Success Aves dis 5 % Shoe Sread Focks Focks See Cutlery Knobs.	Barn Door revised list dis 55-219
" Swres du 25 5 " Globe (Cone's Patent) dis 20x10 5 Gong Abbe's dis 20x10 5 Gong Abbe's dis 25x10 5 Gis 25x10 5	"Firmers, Douglass, Extra	"Smith's Patent per doz \$18:00, dis 40 \$ Gimlets. dis 254:10 \$ Nail and Spike. dis 254:10 \$ "Bee "Gimlets. per gross, \$12:00, dis 45 \$ Louble Cut, Shepardson's. dis 20 \$ Hartwell's. dis 40 \$ ives dis 254:10 \$ Glue Pots.	M. 1008a. dis 60&10 S Base—Common. dis 60&10 S Base—Common. dis 60&10 S Plush Tip. dis 10 S Baste End. No. 8 dis 40& 40& 50 & 40& 50 & 40& 50 & 50& 50 & 50	Tar'd Rope
A DELINE OF A STATE OF	Merril. dis 60&10 \$ Witherby Tool Co. dis 60&10 \$ Socket Corner dis 60&10 \$	Gine Pots. Tinned and Enameled	Base - Common	Sinal 1/2 inch and larger # 10 11/40 1/2 inch # 10 12 0 1/2 inch # 10 12 0 1/2 inch # 10 12/40
Connel a dis sole to s Lever, Sargent's uis sole tok to s Taylor's Bronze or Plated Lever net	Firmers, Douglass, Extra. dis 00&10 x	" Douglass' dis 23-10 % Giue Pois. Tinned and Enameled dis 25 % Family, Howe's "Eureks" dis 25 % " L. F. & C.'s "Handy" dis 25 % Givius Neone Fixures Sargent's Fatent dis 70&10 % Reading Hardware Co. dis 70-8610 % Reading Hardware Co. dis 60-66-610 % Rick Bross. dis 60-66-610 %	Furniture, Plain	Rules
"Barton"s	Clambs. Iron, Providence Tool Co.'s, Wrt. Iron	Hammers.	Wood Serews 41s 20 5	Standard
" Western	100	Hammers. Emmet Hammer Co.'s Handled	Monroes Patent. Per doz \$4'00 dis 30 %	Sad Iron. Since Stand attached 5 5 6 8 c net Sad Iron. Nickei Stand attached 5 7 5 6 8 c net Sad Iron. Nickei Stand attached 7 7 5 6 8 c net Sad Iron. Nickei Stand attached 7 7 5 6 8 c net Sad Iron. Nickei Stand attached 7 7 5 6 8 c net Sad Iron. Nickei Stand attached 7 7 5 6 8 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7
Sargent's dis 60c 10 s Kentuky "Star dis 20c 10 s " Sargent's dis 60c 10 s	"Carriage Makers', Sargent's	Cheney s dis 5 @ 75 g Cheney s dis 5 @ 75 g Verree dis 5 g Magnetic Taok dis 20 g Warmer & Noble's dis 20 g	Brady's Patent	
Nos. 0 1 1% 2 5 4 5 6 Hog. 15 2 5 4 5 6 6 1 1 1 1 2 5 5 4 5 6 6 1 1 1 2 5 5 4 5 6 6 1 1 1 2 5 1	Superior dis 53 % Cockeves 1½ in., 28c.: 1½ in., 83c.; 1½ in., 37c. net Cocks. Brass Racking. dis 45 %	Warner & Noble'sdis 20 \$ Hand Cuffs and Log Irons. Tower's Hand Cuffs, \$4 40 per pair	### ### ### ### ### ### ### ### ### ##	2,3/3 a 5 d 7 c 1 c 1 d 1 d 1 d 1 d 1 d 1 d 1 d 1 d 1
Heliows. Blacksmiths', Common. List of Sept. 15	Cocks. (ils 45 % Brass Racking (ils 45 % Lock and Globe (ils 45 % Lever Bibbs (ils 45 % Aie and Beer (ils 45 % Coffce Mills. (ils 25 % 10 %	Providence Tool Co.'s Hand Cuffs . \$15 per doz dis 10 \$ Handles. Door or Thumb Latches—	Lemon Squoezers. Porcelain Lined	New England, same list as B. & A. Fiint
idand Bellows. dis 10 g stind A djusters.—Domestic v doz \$2—dis 20 g	Coffee Mills	Nos. 0 1 2 3 4 Per doz \$7:80 1:00 1:18 1:35 1:30—die 604:10 \$ Roggin's Latches	Duniap's Improved.	Patent. # \$ \$10. les Silver Lake, Eussis Flax # \$50. pet White Cotton # \$50 or net The Drab Cotton # \$50 or net Raw Htde dis 35 \$
Moulders	French Steel	10 - 11 10 10 10 10 10 10	Sil. Lake Chaik Nos. 0, 1, 2, 3, \$6,6*30, 7, 7*50, dis 20 5 Mason's dis 20 5 Wire Clothes. Gal'd esch 50c. n·t Lacks and Lackbox	Raw Hide dis 25 g Saab Lecks. dis 25 g Saab Lecks. g Clark's Nos. 1, \$10'00; No. 2, \$2'00 per gross. dis 2514 g Ferguson's dis 2514 g
Merriman's	Cook's dis 15 % Excessior dis 40 % Miller's Patent dis 25&10 % Core The	Lifting dis 00&10 \$ Saw and Plane dis 50&10 \$ Bammer and Hatchet dis 10 \$ N. Carolina Handle Co dis 15 \$	Cabinet—Gaylord Special numbers	Ferguson's dis 88% 3 Norwich dis 25 Walker's dis 10 5 New England dis 20 5 Hammond's Window Springs dis 20 5 Sash Weights Soin Syres W 5 1% 0
locks 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	French Steel	Brad Awl	Linen Flah. dis 20 st. Cotton Chaik. dis 20 st. Cotton Chaik. dis 20 st. Sil. Lake Chaik. Nos. 0, 1, 4, 5, 86, 870, 7, 750, dis 20 st. Mason's. dis 20 st. Locks and Lattches. dis 20 st. Locks and Lattches. dis 25 dis 20 st. dis 20 st. Mason's. dis 25 dis 20 st.	Hammond's Window Springs dis 26 Sash Weights.—Solid Eyes 5 1 Kc Sausage Stuffers or Fillers.
Tool Co.'s list	Corn Knives and Cutters. Bradler	Socket asst 40 dis 405 Fig. 7 30 Fig	Continents). dis 25 % Shepardson's, Flat Key dis 55 % American Lock Mfg. Co. dis 28% %	Sansa Weights, Sold aves. 9 h 140 Sansage Stuffers or Fillers. Miles. 9 doz 800 dis 80 g Perry 9 doz No. 11, \$15 No. 10, \$21—dis 80 g Draw Cut No. 4. each \$30 00—dis 20 g Enterprise Mfg. Co. dis 20 g Sulvers. 810 list, dis 10&10 g Sanw Reds. \$10 list, dis 10&10 g Sanw Reds. \$3 50 to g gold Disston of tircular dis 20 g
Isolim Garrel, Shutter, &c. dis 00&10&10 5	### Cast Steel.	Auger	Norwich.	Silver's
	3. %, % in., \$1.80, \$2.00, \$2.40. dis 10 % Curing Touge. \$\phi \text{dat \$6.50}\$—\text{dis 10 \$\frac{10}{5}\$\$ \$Pinching Irons. \$\phi \text{doz } 7.50\$—\text{dis 20 \$\frac{1}{5}\$\$}\$	Patent Auger, Ives' large " 5 00 Patent Auger, Ives'	Norwich. Russell & Brwin. Russell & Brwin. Als 5665 \$ Mallory. Wheeler & Co. Mallory. Wheeler & Co.	Spear & Jackson's \$3 50 to £ gold Disston sCircular dis 25 g Mill dis 25 g
C relage and Tire, Common. dis 75&5 & cash Norway Iron dis 50 & 10 & 10 " R. B. & W. (old list) dis 60&5 &	Curry Combs. Curry Combs. Curry Comb Miss. Co	Hangers- Barn Door. "Anti-Friction" No.1, \$1'25; No. 2, \$1'50 # pr dia 40 \$ Novety dis 41 \$ Challenge dis 40 \$ Climax No. 2	Mallory, Wheeler & Co. P. & F. Corbin. Parker & Whitpile Parker & Whitpile Padicols, Russell & Erwin Win. Wheeler & Co. and 3 x for cash Win. Wilcox & Co. als 33/x 5	Hand, Fanel, Rip, &c. dis 15 & H. W. Feace's Circuiars dis 25 & Mill, Gang and Mulay dis 25 &
" Philadelphia dis old-10 g Sheineu" (old list) dis 60-25 g Uniou Nut Company, old list dis 63-5 g Shove—American Screw Co. 8. dis 45 g	Wood Tooth (Fuller Bros.)	Harness Snaps. Henshaw's. List of 1% changed to \$14'00, dis 224 @ 45 g	Mallory, Wheeler & Co and 3 5 for cash Wm. Wilcox & Co and 3 5 for cash American Lock Mfg. Co. als 334 5	k. M. Boynton's Lightning, Cross Cuts
Keystone Portable Forge Co	Cutiery. American Table Meriden New list July "6, dis 25 g American Pocket Cutlety Co dis 35 g Am. Pocket—Humason & Beckiey Mfg. Co dis 25 g Am. Miles Bro.'s Cutlery Co dis 25 g Am. Miles Bro.'s Cutlery Co dis 25 g Naugatues Cutlery Co dis 25 g	Harness Snaps. Henshaw's. List of 1% changed to \$14'00, dis 42% 4 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Some	Wheeler & Clemson Mfg. Co.'s Hand
Borna. 124 & 134c. * b Boring Machines. Upright. Angular. Bovey's, no Angers. \$3.15 \$4 vm net with Angers 5-00 \$50 net	Naugatues Cutlery Co	Hintchels Isalah Blood dis 155	Maries & Deitz	Spear & Jackson's
	Busined per doz \$75—dis 20 \$ Los Collars* Embossed Gilt dis 20 \$ Losther dis 20 \$	Claw, 128 9 doz 7 75 8 50 9 25 Lathing. 128 9 doz 7 50 8 00 9 35 Hunt's 128 9 doz 7 50 8 00 9 25 Shingling, Nos. 128 9 doz 87 22 8 00 8 25	Maileta. Hickory and Liguunivitie. dis 30 g Meas Cutters. dis 30 g documents dis 30 g dis 30	Per doz \$12'0 10'00 12'00 900 \$00 600 dts 10 \$ Saw Sets. \$5tll man's Genuins. \$000 \$4'50 dts 10 \$ "Imitation. \$000 \$2'5 dts 26 \$ Common Lever. \$000 \$000 \$000 \$000 \$2'5 \$ Leach's No. 0, \$8'00; No. 1, \$15'00 dts 15 \$ Leach's No. 1, \$15'00; No. 2, \$5'50 dts 26 \$ Leach's No. 1, \$15'00; No. 2, \$5'50 dts 26 \$ Leach's No. 1, \$15'00; No. 2, \$5'50 dts 26 \$ Leach's No. 1, \$15'00; No. 2, \$5'50 dts 26 \$ Leach's No. 1, \$15'00; No. 2, \$5'50 dts 26 \$ Leach's No. 1, \$15'00; No. 2, \$5'50 dts 26 \$ Leach's No. 1, \$15'00; No. 2, \$5'50 dts 26 \$ Leach's No. 1, \$15'00; No. 2, \$15
with Augers 740 10 00 dis 9 5	Losther	Shingling, Nos. 128. 9 doz \$7 22 8 00 8 75 Ulaw, 128. 9 doz 7 75 8 50 9 25 Lathing, 128. 9 doz 7 50 8 25 9 00 Hurd's doz 7 50 8 25 9 00 Hurd's doz 8 00 8 80 8 80 8 80 8 80 8 80 8 80 8	mues UnallengeNos 1 2 9 dos. \$2700 \$4000 \$4000—dis 50 5 Perry'sNos. 1 2 8 4 4 5 g'rd Each \$3'00 \$4'00 \$5'00 \$11'00 \$18'00 \$40'00—dis 50 5	Leach's. No. 0, \$8'00; No. 1, \$15'00 dis 15 \$ Nash's. No. 1, \$8'50; No. 2, \$5'50 dis 20c:10 \$ Hammer, Hotchkiss. \$5'30 dis 10 \$ "Bornis & Callie
Shell's	Johnson's " dor \$3.00 net Gem (Coil)— No. 1, Large, Japanned	Shingling, Nos. 12 S.	Woodruff's (P. S. & W.)Nos. 100 150 ₩ doz. \$15:00 \$19:00—dis 25 ≤ Hales'Nos. 11 18 18	" Alken's Genuine
### Plans 1.50	Gem (Coil)— No. 1, Large, Japanned	Shingling, Nos. 1 2 3.	Draw Cut. Nos. 5 2 6 8 10 Each \$60:00 \$75.00 \$80:00 \$225:00 \$400:00—dis \$0 5 American	Tea
Braces. Barber a Patent. Q S. Backus. Wilson Mig. Co. Scotland Batant. Sec. Sec. Sec. Sec. Sec. Sec. Sec. Sec.	Galvanizedper goz \$50 4:00 4:50 dis 10 %	Shingling, Nos. 0 1 2 8 \$\psi\$ doz \$7 50 8 00 8 50 9 00 \$\ Claw, \qquad 1 2 8 \$\psi\$ doz 9 00 9 50 10 00 \$\ Lathing, \qquad 1 2 8 \$\psi\$ doz 9 00 8 50 9 00 \$\ Broad, \qquad 1 2 8 \$\psi\$ doz 9 00 10 00 12 00	Fach\$5-00 \$7-50 \$10-00 \$12-00 \$25-00 \$50-00 \$60-00 Molenages Gates. Stebbins' Pattern	Brown's 41s 25.65 g Fairhanks' dis 20.65 g Howe's dis 20.65 g Chatillon's Grocers' dis 25 g
Sport ord's Patent dis 50 s	Nicseled. Per dox 8750 625 500 dis 30 5 Nicseled. Per dox 1100 950 500 dis 30 5 Nitseledis. Sin, 8500; 8 in, 8700 dis 15 5 Barker's Concessed. dis 15 4	Lathing, "123", 9 doz 8 00 8 25 9 00 Broad, "128", 9 doz 9 00 10 00 12 0		" Eurekadis 20 %
Vest Centennia dis 40&10 x	Drawing Knives. dis 60&5	Lath. 128. • doz 10 50 10 00 9 50 Half Hatchets, Nos. 128. • doz 11 00 10 50 10 00 J. P. Verree & Co	Mortage and Postles- Iron	Universit Family Gis 25 g
Sargent s. dis 60&10 % flotchkiss' 3% in. \$745 net Humason, Beckiev & Co.'s dis 50&10&5 % Butcherg' Cleavers.	Harf Mfg. Co., No. 1	Half Hatchets, Nos. 12 S. w doz. 11 Cl. 10 50 10 000 J. P. Verree & Co	Nait Puliers. Taft's per doz \$349) net Nails See Trade Report Nuts and Washers	The state of the s
				Screw Drivers. dis 55&10 \$ Douglass Mfg. Co
Beatty's dia 20 \$ 1	Drills and Drill Stocks. Blacksmiths each \$2.50 dis 10 \$	Sandgring, Nos. 123. 4 doz 850 8 50 9 00 Half Hatchets, Nos. 123. 4 doz 8 00 8 50 9 00 Claw, Nos. 123. 4 doz 9 00 9 50 10 00 Lathing, 128. 5 doz 8 00 8 50 9 00	Navy. # 5 74c I Oliers. # 5 74c I Miller's Zinc, Brass and Copper. die 45 s	Sand-Providence Tool Co. Cis 10 S
120 2 2 2 3 3 3 4 3 3 3 3 3 3 3 3 3 3 3 3 3	Hotchkiss dis 10 \$ "Wilson's dis 10 \$ Miller's Falls each \$250, us 25 \$ Ratchet Merrill's	Broad, 234	Olmsted's. dis 30&10 € 58 Olmsted's. dis 30&10 € 58 Broughton's. dis 20&10 € 58 Malleable. per doz \$8 00 dis 10 € 58	Fiat H'd Iron, list Sept. 1, 75, R.&K. Mfg. Co dis 60 g Am. Sc. Co dis 57 g g
COMMON CAST, NOT DRILLED. Fast coint, Narrow	" ingersoil's (old list) dis 35 5 " Whitney's dis 20 4 " Weston's dis 20 5	Lathing. "123. \$\frac{1}{2}\$ do 12 0 1 1 00 13 6 \text{M}. H. Jones & Co. \$\frac{1}{2}\$ Co. \$\frac{1}{2}\$ do 28 0 0 8 50 9 00 \text{Haif Hatchets, Nos. 12 8. \$\frac{1}{2}\$ do 28 0 0 8 50 9 00 \text{Claw, Nos. 12 8. \$\frac{1}{2}\$ do 28 0 0 8 50 9 00 \text{Claw, Nos. 12 8. \$\frac{1}{2}\$ do 28 0 0 8 50 10 00 \text{Lathing, "12 8. \$\frac{1}{2}\$ do 28 0 0 8 50 9 00 \text{Hroat, "12 8. \$\frac{1}{2}\$ do 28 0 0 8 50 9 00 \text{Hroat, "12 8. \$\frac{1}{2}\$ do 28 0 0 8 50 9 00 \text{Hroat, "12 8. \$\frac{1}{2}\$ do 28 0 0 8 50 9 00 \text{Hroat, "12 8. \$\frac{1}{2}\$ do 28 0 0 8 0 \$\frac{1}{2}\$ 0 0 0 \text{Hroat, "12 8. \$\frac{1}{2}\$ do 28 0 0 8 50 9 00 \text{Hroat, "12 8. \$\frac{1}{2}\$ do 28 0 0 8 50 9 00 \text{Hroat, "12 8. \$\frac{1}{2}\$ do 28 0 0 8 50 9 00 \text{Hroat, "12 8. \$\frac{1}{2}\$ do 28 0 0 8 50 9 00 \text{Hroat, "12 8. \$\frac{1}{2}\$ do 28 0 0 8 50 9 00 \text{Hroat, "12 8. \$\frac{1}{2}\$ do 28 0 0 9 0 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Prior's Fatent or "Paragon"	Flat Head Brass " " dis 2016 8 Sound Head Brass " " dis 40 8 Srass and Silver Capped, List March 1, 75 dis 40 8
A POURTI Briss Clis 90 6	Wilson's Drill Stocks. dis 20 @ 25 5 Wilson's Drill Stocks. dis 10 6 Automatic Boring Tools. each \$7:75—dis 20 6 Drill Chucks.	Hay Knives.—" Lightning " per doz \$20 °C net Wadsworth's	Round Gilt. P gross \$6 W net Dixon's Lead. P gross \$450 net E Lumber P gross \$450 net P gross \$40 net F gross \$40 net F gross \$40 net F gross \$40 net F gross \$400 net	Coach. Patent Gimlet Point, List Jan. 1, 1875.dia 40 @ 50 % led. dis 5 @ 10 % upanned, List of Plain Screws of cept. 1, 1875. die 50 %
Loose Pin Japanned dis 45&10 % Loose Pin Japanned de 5&10 % Loose Pin Jap d. Plated Tips dis 50&10 %	Danbury each \$6.00, dis 30 s Morse's Beach Patent dis 30 s Adjustable each \$10.00, dis 30 s	Gate, Western	U. S. Navy. \$ \$ \$\circ\$ C. Navy. \$ \$ \$\circ\$ C. Navy. \$ \$ \$\circ\$ C. Navy. \$ \$ \$\circ\$ Navy. \$ \$ \$\circ\$ Navy. \$ \$ \$\circ\$ Navy. \$ \$\circ\$ Nav	Screws. Scre

Treedings: 1, 1970		THE INON AGE
Nettlefold's Brass	Wringers. Universal, without Cog Wheels	TURING.
Netteroid 8 Briss	Wringers. 54:00 Universal, without Cog Wheels. 54:00 Vorley, With 66:00 Novelty, 54:00 Novelty, 66:00 Sherman, 66:00 Sherman, 66:00 Excelsior Bench Wringers. 88:00 Excelsior Box 50:00 Crown No. 2 51:00 Climax No. 2 51:00 Less \$2:00 To No. 156. 19:00 To Start Tubs. 19:00 The No. 19:	Plain to No. 20 inclusive, above 1/2 in. to 3 in \$ 40 "above 3 in
Hand Rail, Sarkent's	Sherman, " 66-00 Reliance, " 88-00 Reliance, " 8	Number, 26, four cents advance on List for each Number, Above No. 26, special rates.
Scythen	" for Set Tubs	Plain 5 15ch 70 110 110 110 110 110 110 110 110 110
# Silver # # # # # # # # # # # # # # # # # # #	Climax No. 2	All Mandrel Drawn Tubes, 5 cents advance on List Prices.
Slood's German Steel, Grains # doz #10 to	No. 1%	Fraces. Fancy Tubing to No. 20. 48c English, Scotch and Extra Patterns Fancy Tubing to No. 20. 58c Tubing Sawed or Cut 2 to 4 feet long, 2 cents advance or List
Wadsworth's Grass dis 30 % Bush dis 20 % Scythe Snaths dis 20 %	Stamped Tin Ware. dis 10 ° Stamped Deep and Retinned Ware. dis 30 ° Stamped Deep and Retinned Ware. dis 30 % 14 pagned Tin Ware. dis 3 ° Planished Tin Ware. dis 3 ° dis 30 °	Add to 2 cents 16 cent for each additional cutting
Shears and Scissors.	Planished Tin Waredis 20 %	pound advance.
Cast Iron dis 40 * Seymour's Straight Trimmers dis 60 * Scissors dis 50 * Pruning's Scissors per doz \$\$500 \(\times \) on net barnard's Lamp Trimmers per doz \$\$700 \(\times \) or doz \$\$100 \(\time	METALS.	Plain
Prining per doz \$\$750 @ 6700, net Barbard's Lamp Trimmers per doz \$\$75	1840N DUTY Bars, 1 to 15 cents per lb., Sheet, Band,	Fancy. 31 Scotch and Extra Patterns. 34
Sliding Door, M. W. & Co. list dis 35&5&2 % R. & E. list dis 50&5&2 % Patent Roller dis 50&2 % dis 50&2 %	Hoop and Seroil, 15 to 1% cents per lo. Sneet, band, Hoop and Seroil, 15 to 1% cents per lo. Provided, that none of the above Iron shall bay a less rate of duty than 35 per cent. Pig. 37 per ton; Polished Sheets, 3 cents per lb.; Wrought Scrap, 48 per ton; Cast Scrap, 46 per ton; Cast Scrap, 46 per ton; Italiroad, 70 cents per 100 lbs. Boiler and Plate. 15 cents per lb.	GRRMAN SILVER TUBING
Russell's Anti-Friction dis 50&2 & Silding Shutter, R & E. List dis 50&52 & Co.	66 per ton. Rallroad, 70 cents per 100 lbs. Boiler and Plate.1% cents per lb.	12 46 125 18 04 4000 125
Shovels and Spades. Ames dis 25 t	Pig tron—American. bundry No. 1. bundry No. 2. bundry No. 2. 19 00 @ 20 00 Gray Forge. 19 00 @ 20 00 00 @ 20 00 00 @ 20 00	18 6 1-95 20 6 1-95
Sheaves Shea	6 ray Forge	
Priming a Shovets and Scoops dis 2027% \$ Shovets and Touses iron and Brass Head, t. & E. Hat. dis 50&10€2 \$ Follahed Steel dis 55&2&0 € Pollahed Steel dis 50&10€2 \$	Egilinton 20 00 66 26 50	11 under 500 76 Door Rail 40
Polished Steel	far aren. Am. Renned, at mill	Common Plain Brass Pail Ears. 39 Hose Pipes, 500 and over. 11 " under 500. 16 Door Rail. 5CRAP. 40 High Brass Scrap, 16 cents. Low 16 cents. Low 16 cents. Turnings, Filings and Chips, half the price of Scrap. Orders for Goods on this list received on or after this date, will be filled at the rate herein stated, Terms-Net cash. No discount allowed. Interest to
States. Square Frames, Round Cornered, by case	Iron, at mili	Turnings, Filings and Chips, half the price of Scrap. Orders for Goods on this list received on or after this date, will be filled at the rate herein retards.
Booke Shaves. Defiance Metallic	Scrap. Wrought Scrap, from yard " 25 51 @ 26 00	be added after thirty days.
Wood	Common Iron.	LEAD-DUTY: Fig \$4 per 100 ins.; old Lead, 1% cent per ib.: Pine and Sheet, 2% cents ner ib.
Spokes.	\(\to \) in. round and square \(\to \) in \(\to \) in \(\to \) in \(\to \) in round and square \(\to \) in \(\to \) in round and square \(\to \) in round and square	Spanish
Douglass' per doz sww dis 20210 5 Spoons. Tinned iron. dis 15 g	Refined from Refi	ANTIMONY
By the case dis 30% Basting dis 15 € Britannia dis 55 @ 60 €	Bands—1 to 6 x 12 to 8-16.	Tin Lined Pipe. dis 10 % 10%c. 8heet 10% 10c. 10c. 10c. Shot 10s. 10c. 10c. 10c. 10c. 10c. 10c. 10c. 10c
Douglass' per doz \$9'W dla 202610	Plow size	N.P.U W B 8% @ 9c
Holmes, Booth & Haydens. dis 40&5 % Nickel Silver Co. dis 30 %	Common R. G. American. American.	STREL-DUTY: Bars, Ingots, Sheets and Colls, valued at 7 cents perlb., or under, 2% cents; over 7 cents, and
Tin (P. S. & W.)— Teas. \$1.50 \(\pi \) gross, net Tables.	21 to 34	and 10% ad val. Railway Bars 1% cents per lb. and 10% ad val. Railway Bars 1% cents per lb. Railway Bars, in part Steel, 1 cent per lb. Provided, that
Germin siver 17th (P. S. & W.)— 17th (P. S. & W	28	STREL-DUTT: Bars, lagots, Sheets and Colls, valued at 7 cents perib., or under, 2% cents; over 7 cents, and not above 11, 3 cents per ib. over 11, 3% cents per ib. and 10% ad val. Railway Bars 1% cents per ib. Railway Bars, in part Steel, I cent per ib. Provided, that Metal cemented, cast or made from iron by the Bessemer or pneuma. c process, of whatever form or description. shall b classed as
Stencil Combinations - Stafford Mfg. Co Inch.	Common R. G. American. American. American. American. American. 21 to 24	American Cast Steel.
Stocks and Dies.	Patent Planished	Homogeneous
Sand Stone P B 10c	telgian. "10c One piece Corrugated Sheet from Elbows, GHABOOAL TRON.	Tool
Stone	% 5 5% 6 7 inch. 42.50 3.50 4.50 5.25 6.50 per dox.	circular as to size
Slips	#15 5 55 6 7 Inch. #5 00 7 00 950 13-00 14-00 per doz.	Chrome Steel
State Profest Review Francis	OPPER -Duly. Pig. Barand ingot, Sc.; old copper, 4 cents # &; Malufactured (including all articles of which copper is a component of chief value) 45 % ad	Machinery #. P. 14c Hammer 15c, Gun or Homogeneous 16c
Rising Sun per gross \$5'.5 net Squares.	valorem. American Ingot	
Squares dis 50 % ; full cases, dis 50&10 % fron dis 50 % ; full cases, dis 50&10 % fron dis 50 % ; full cases, dis 50&10 % Nickel Plated add \$2.50 @ \$4.00 % doz net Try Squares and T Bevels dis 50 % Star Try Squares and Bevels dis 50 % di	UNICATHING. BRAZIERS COPPER, BOLTS, 40.	Round Machinery, Cast
Try Squares and Bevels	Sprayers Copies, ordinary sizes, 16 oz. and over 12 oz., per square foot	Bister, 1st quality 14%c 18 c German Steel, Best 11%c
Diston's Try Squares No. 1. dis 30	Circles, 84inch diameter and over	Register Payable in gold, net. # B IT K 18
Tacks, Bri "s. &C.—List of January 1, 1946. Tacks, Half Weight, American dis 53&	Segment and Pattern Sheets	File Steet, Fiat and & Round 12%c
Tacks, Half Weight, American. dis 75& "Full ght, American. dis 75& "Carpet, Am. and Swedes. dis 10 & "Carpet, Am. and Swedes. dis 10 & "Coppe Leather Head. dis 10 & "Coppe Leather Head. dis 10 & "Brads. Half Weight. dis 50c.	Locomotive Fire Box Success 25 oc. Sec. Sec. Sec. Sec. Sec. Sec. Sec. Se	* Mill. * 134c * 136c * 16c * 16c * 16c * 16c * 16c * 16c * 18c *
Brads, Half Weight. # 10 43c. dis Shoe Nails	Shoothing Copper tinned on one side by the	SOLDER
### Mais— ### A Sths and longer, 9c.; 3½-8ths, 9½c. t. fb, dis 10 5 ### Trunk, Clout and Finishing Nais— ### 1½ in. and over. ### 25 17 13 18 11c. # fb, dis 10 4 Double Pointed Tweks	case	per 100 lbe. Silestan, cash
Double Pointed Teeks	O'NEILL'S PATENT PLANISHED COPPRE.	TIN-DUTY: Plates, Sheets, Tagger and Terrie, Pic. per lb.; Electro-galvanized Plates, 2 cents per 8: Manufactures of, not enumyated, 35 per cent. ad vsl. Bars, Block and Pigs, free. Banca. subject to duty of 10
Tap Borers. Journor and Ring. dis 20&10 g res' Tap Borers. Enterprise Mfg Co. dis 20 g dis 20 g	14 and 16 oz. and heavier37c. By the case, 36c. \$\pi\$ at 12 oz. and lighter40c. ***Boller Sizes.**	Bars, Block and Pags, free. Banca. subject to duty of 10 per cent.
Tapes Honauring American Fissa and Cap Co. dis 20 s Eddy s dis 20 s Tea Trays American Fissa and Cap Co. dis 20 s American Fissa Tea Tray Co. dis 15 s	12 Oz. and lighter	per cent. Banca. \$ \$ \$ \$ \$26., currency \$ \$ \$ \$16., currency \$ \$16., currency \$ \$ \$1
Tea Trays. American Tea Tray Codis 15 5 Thermometers. Tin Case	14 and 16 oz. and heavier	1 C 10x14 12x12 Prime Charcoal
Toe Calks. Winsted P b 18c., dis 20 %	Brown & Sharp's Gauge the Standard except for Fine	1 X 10x14 12x12 14x20 Prime Charcoal
Toe Calks. Winsted Tabacce Catters. Enterprise Mix-Co. (Champion)	Wire. BRASS MANUFACTURERS' PRICE LIST.	D C 12 x x 17
Nashua Lock Co.'sper doz \$18 00—dis 50 % Tinners' Tools and Machines. P.S. & W	October 27th, 1875. Net cash prices for Roll and Sheet Brass Wire, &c., for quantities of ill pounds and over at one time. For	CORR TIN PLATE. Reat. 2d qua'ity. Ordinary.
Traps. Game, Newhouse	less than 100 pounds, three cents additional. HIGH BRANK All Nos. to No. 28, and widths 14 in, and under 27c.	I C 10x14 1 C 12x12 1
P. S. & W	All Nos. to No. 28, and widths is in. and under	TERNY PLATE. Prime Char. 2d qual. Coke. 1 C 14x20 97:50 7:00 @ 7:25 6:50 @ 7:00
Nut Co	%c. Wm advance on each No. above Nos. 28 to 38, in- ciusive. All Brass thinner than No. 38 is Platers' Brass. at 45c Sheets 24x48 in. and all sheets cut to particular sizes	1 C 20x23 15:50 14:50 \$ 15:00 18:00 \$ 14:00
Cage, W doz 2 to to 2 50 net Patent Self Setting. per doz holes 25c net Catchemalive.	and lengths 1990	1 C 14x20 M P. Brand
Trowels. Lothrop's Brick and Plastering. Dission's Brick and Plastering. dis 15 s. Peace's Plastering. dis 20 q	Printers' Rules	ZINCDUTY: Pig or Block, \$1 50 per 100 lbs. Sheet 24c. * b. Sheet
Peace's Plastering dis 20 c Rose's Brick dis 10 c Brades' Brick gold. dis 10 c Brades' Brick gold. dis 25 c Worrall's Brick and Plastering dis 25 c Garden dis 25 c	Over 14 50, 6 40c 10 10 10 10 10 10 10 10 10 10 10 10 10 1	Paper Stock, Old Metals, & c.
Worran's Brick and Plastering dis 25 % Garden dis 25 % Triers dis 25 %	LOW REASO.	-
Triers. Butter and Cheese. dis 25 5 Ventilators (Window). Nickel and Gilt. per dozen \$16 00 @ 18 00	Folicents was noted than High Brass. Gilding Metal 7c, * 5 more than High Brass. In Bars. Sawed. Sawed. 45c Planed or Polished. 48c	Canvas linen
Vacuation	FOR SILTTING. Metal, in width 2 in so 1/4 in to No. 20, inclusive, is, per	White lines rags, No. 1
Parallel, Parker's	b. advance. Metai, in width 2 in. to 1 in., thinner than No. 30, 3c. per b. advance.	But woolens 5% 6 5% 66% 60 cmay bagging 6 2%
Sargent's dis 55&10 \$ Trenton dis 20 \$ Backus and Union dis 20 \$ Backus and Union dis 25 \$ Backus and Union dis 25 \$ Backus and Union dis 25 \$ Backus and Union dis 55&10 \$ Backus and dis 55&1	Metal, in width 1 in. to 1/4 thinner than No. 30, 3c. per B. advance. Metal, in width 1/4 n. to 1/4, to No. 30, 3c. per B. ad-	24 24 15 25 24 15 25 25 25 25 25 25 25
Merrill's dis 15 % Ficher & Norris dis 15 % Hull 15 % 10 %	vance. Metal, in width 1/4 in. to 1/4 thinner than No. 30, 5c. per b. advance.	17 18 18 18 18 18 18 18
Simpson's Adjustable dis 25	Metal, % in. in width and less, 10c. per lb. advance GERMAN SILVER MARKET METAL AND WIRE	Grass rope
## Stearn's per doz \$40 00 dis 25 % Hopkins' per doz \$1 7 50 dis 10 % Wheel Barrews.	4 per cent., 12 in., to No. 36. Market Metal. Wire. \$0.80 \$0.80 \$0.80	Canvas itnen
Wheel Barrows. anai (Pugsley & Chapman)	10	Soft No.1. 6 White Shavings, No.2. 5% 6 Wised Shavings, part white.
Well Wheels,—Revised list	German Silver Sheets over 12 in. wide, and weighing more than 10 Bs., \$2 per B., net. Advance 2c. for each additional in., in width above 12	White Shavings, part white 4 44 Mixed Shavings, part white imperfections, No. 2, best folded sheets 5 4 6 1 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1
Fright and Anneated Nos. V at 18 dis 50 at 52 kg. 19 at 28 dis 55 at 57 kg s 27 at 36 dis 57 kg at 0 g	Advance 2c. for each additional in., in width above 12 in., and 2c. per B. on each No. thinner than Nos. 26 to 36 inclusive.	" No. 2, light. 2¼ © 2½ Newspaper Stock. 3 Prints. 1½ @ 2
Asivanized, Nos. 0 to 6	All German Silver thinner than No. 36 is Platers' at 50c. per m. additional. German Silver Scrap one-third less than net price of 12	Pure Manilas and Hardwares
ast Steel. dis 15 @ 30 s (German Silver Scrap one-third less than net price of 12 in. Market Metal. German Silver Turnings, Filings and Chips, half the price of Scrap. BRASS AND COPPER WIRE.	Newspaper Stock
alvanized Telegraph, Nos. 10 and 11		Satiset Tallor Clips 2 @ Copper Old Metal. 4 17%
Grape, 16 to 14	Nos. 21, 22, 28	Copper
Sana Pageley & Chapman New list dis 90 s	signifier than No. s	The lead
teel Music Wire, Nos. 12 to 27. F b 10c ugd's Picture Wire. dis 50 g Nothes Line Wire. per coil 50c, net	of Round Wire. Spring Wire, 2 cts. per lb. advance.	Pewter, No. 1
Wrenches. imerican Adjustable	FINE WIRE, BY THE OLD ENGLISH FINE WIRE GAUGE. Gild'g and High Brass. Low Brass. Cop'r.	1
Olins & Co. a	No. 27	Light Ironper ton \$11.00 Stove plateper ton \$12.00 Burnt Ironper ton \$5.00
Pattern (Wrought)		Paints, Oils, etc.
Juli & Reldenie # Chinese		
Hull & Belden's " Climax "	No. 88	Paints. Buck lamp—Coach Painters.
		Paints. Black lamp—Coach Painters. Ordinary for Jordy Jordy, fail. Deat Black Paint in oil Kegs, 8c.; assi'd cans, its

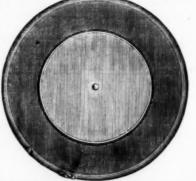
Bine, Frussian, fair to best	Chaik	%
Chinese dry	"Block. Dryer, Patent, Am'n. ass't cans, 1950; k Flocks. "English. "Itc.:	egs.9
	Flocks English " lic.;	1 9
Van Dyke	Glue White	2 00 44
Green, Chrome	Sheet. Glaziers' Points, Zinc.	20
Green, Carome		
Mineral Paints 30c 45c	Damar.	25
Orange Mineral	Damar	50
English	Pumice Stone, selected Lumps	4 62 6
venetian (N. C.) dry	Putty in bladders.	4
Rose Pink lac	to bulk. Botton Stone, soft, English.	3%
Sleuns American, Raw		
in oil.	Whiting, Spanish	%
15 @ 950	Gines.	
Umber, Burnt	FRENCH WINDOW GLASS.	
" In oil.	Prices current per box of 50 feet.	
** in oil	Single Thick.	-
** Trieste	912Es. 1st. 2d. 3d.	414.
Wuite Leid, American, pure dry	6 x 8 to 10 x 15	5-7
Wante Let.d, Americac, pure dry 10c 103/cc 103/cc 100 11c 105/cc 100 11c 105/cc 100 11c 105/cc 100 11c 105/cc 10c 10c 10c 10c 10c 10c 10c 10c 10c 1	11 x 14 to 16 x 24. R50 7.75 7.26 18 x 23 to 20 x 30. 10.75 9.75 8.75	6-7
Yellow Ochre, French	15 x 96 to 24 x 90 . 12-25 10-78 0-00	1.12
in ollaset'd cans, lic; kegs, 8%6	26 x 28 to 24 x 36. 18 00 11 50 9 75 26 x 86 to 26 x 44. 14 50 13 25 10 78	
Yellow Chrome	26 x 46 to 30 x 50. 15:00 14:10 11:26 30 x 5? to 30 x 54. 16:00 14:50 12:00	
Zinc White, American No. 1 dry	30 x 56 to 84 x 6 17'25 15'50 14'50	
In oil 16 27c	34 x 56 fo 34 x 60	
9°1	Double Thick.	
Oua.	SIERS. 1st. 2d. 8d.	4th
idnaced Raw ♥ gai. casks, 60c, bbl., 61r	6 x 8 to 10 x 15	8 9.3
Whale, Crude	11 x 14 to 16 x 24. 18 75 12 50 11 75 18 x 23 to 20 x 30. 17 25 15 75 14 00	10.5
Bleached Winter 7be	15 x 8; to 24 x 0	
Winter unbleached	26 x 36 to 26 x 44 99-96 91-96 19-96	1
Seal Extra Refined	36 x 46 to 30 x 50	
Lard, Pure Winter 90	30 x 56 to 54 x 60 21.75 25.00 21.75 34 x 58 to 54 x 60 59.95 97.75 24.00	
Cotton Seed, Crude	36 x 60 to 40 x 60, 83.25 S0.00 27.78	
Walte	Sizes above 40 x 60— 10:00 per box extra for over	y five
Nestafoot, Winter		Glass
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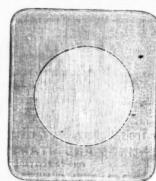
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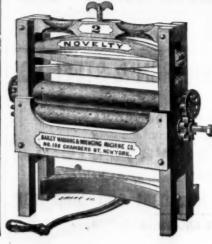
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 Clothes Wringers. - Universal per doz \$22 0 Cutlery.—American Pocket (best)...... dis 30 @ 38% i Landers, Frary & Clark, J. Russell & Co. and Lamsol & Goodnow Mfg. Co. Manufacturers' net prices Nicholson Mill Files.. Crown-4 % in. roll..... Shingling and Half. \ \begin{pmatrix} \pi & \doz & \pi \cdot \text{00} & \frac{7.50}{7.75} & \frac{7.75}{8.0} \\ \text{No} & \dot & \text{1} & \delta & \delta \end{pmatrix} Hinges. oor Mortise and Rim, Min- New list; Discount 35 6 Trunk Locks... Thumb and Roggens Latches. dis 25 Lanterns, — Square Candle and Off.
Globe for Off.

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Tubular Lanterns. Mattocks.—Long and Short Cutter...
Western Pattern...
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Rakes.—Cast Steel Garden
Malleable Garden

Wood Head Iron Teeth No......50 100 150 200 250 300 135 50 \$

doz....\$14-50 17-75 21:00 26:50 \$1:50 \$8:50 \$

No.....50 100 150 20 26:50 \$1:50 \$8:50 \$ Source So

	Г	E
Ī	a wa. Diaston's Cross Cut, No. 1 per ft., 55c	
	Nw. Dianton's Cross Cut, No. 1.	Th of L
-	Boynton & Lightning, new list dis 50 % Hoynton Champion dis 45 % Boynton One-Man Cross Cut Saws dis 40&10 %	lron fice
1	Boyston Billet webs (no frame)	Mere Flat
	Back Strap	Iron Norv Iron
	Sad Irons.—Richmond (possible face)be the case is a stone.—Arkansas Oli, No. 1	Beet Fend
	Extra discount on above for 10 days' cash, 5 s. Sad Irons,—Richmond (poished face)	76
	Hindostan 8 inch	Carr Stov Elev Mac
1.	Screws. United States and others in Combination dis 52% 5 Reystone, not in Combination	Boh Pat.
	Pritted	Nut
	German Silver	Stan Iron
	Pool Prince Pri	Sc Pat.
	Stove Polish.—Gem	Sket 5c 7c
	Stanley Itsul and Level Co. dis 45&10 % Willis Thrall, No. 2. dis 30&10 % Diseton a No. 2. dis 40 %	Scre
	Trunk, Clout and Finishing Nails	Stra Sere 100 Brid
	Praps.—Genuine Oneida—Newhouse listdis 30,825 g Im. Oneida—Newhouse list (1st qual.)dis 40 @ 40,65 g	11
	Wrenches, Coes Genuine dia 1925 de 1920 Coes Imitation Wrought Bar dis 502 50 10 10 2	96. 96. Brid
	Tafts Pattern (Wrought Bar) dis 70 @ 70 & 10 & 10	Wro Case Du 3
	Wire.—No. 0 to 18. Advanced April 24th.	Sing
	No. 19 to 36 No. 27 to 36 No. 27 to 36 No. 27 to 36 Coppered to 12 Tinned Broom Wife. Galvanized Wire No. 1 to 13	Sing
5 6 6	Tinned Broom Wire. dis 35 % Galvanized Wire No. 1 to 18	Nec Ir Nec
2 2	BUFFALO.	25 D Y
10 14 10	Reported by Messrs. Sidney Shepard & Co. Oot. 13, 1876. Augers—Snell Mfg. Co:	Pla
1000	Augers—Snell Mfg. Co. dis 25&10 \$\) Axes—Francis \$\frac{4}{5}\$ 100 \$\] Axes—Francis \$\frac{4}{5}\$ 100 \$\] Bits, Augers—Snell Mfg. Co. dis 25&10 \$\] Axes—Snell Mfg. Co. dis 25&10 \$\] Bits, Auger—Snell Mfg. Co. dis 25&10 \$\] Bits, Co. 18 \$\) a Genuine dis 25 \$\) Bits, Co. 18 \$\) a Genuine dis 25 \$\) Bits, Co. 18 \$\) a Genuine dis 25 \$\) Bits, Co. 18 \$\) a Genuine dis 25 \$\) Bits, Co. dis 25 \$\) Bits, Co	Wa Wa
200	Bells, Cow—1 aw s Genuine dis 25 g Braces—Bit, Spoiford's Patent dis 50 g Brads, Cut dis 50 g	Wa
200	Bella Cow 1 aw a Genuine	Nec ex Wa
8	Can Openers—Sprague's dis 55-210 Cases—Parior Coal Hod. dis 55-210 Cases—Parior Coal Hod. dis 55-210 Cases—Firmer Scotter. dis 55-210 Cases—Firmer Scotter.	10 12 11 12
K	Framing Socket dia 70 \$ Corner Socket Chisels die 70 \$	12
C	Castings Malleable Bb 90 Cocks—Globe and Bibb. dis 41 g	12
d	Egg Beaters—"Dover" per doz \$1-00 Elbows—Corrugated distributable del 20 g	15 20 5c 1
N. W	Columbus dis 25 % Files—Maischoss Bros. dis 25 % Files—Maischoss Bros. dis 50 & 10 & 10 & 10 & 10 & 10 & 10 & 10 &	In S
5	Freezers, Ice Cream—"Champton" dia 33% f Hammers—Henry W. Kip's dis 1065 f Hinges, Gate—Shepard's dis 3065 f	Sin Wr
MARK	Hinges—Window Bind— Shepard's and Standard	WY
0000	Funnel, Black and Galvanized. "dis 15 % Fancy and Helmet "dis 15 % Sad Irons	Wa
0 %	Kettles—Bress. • B.450 Copper. "Hand Made"	Sta
* * 0	Razor Blade dis 60±10 q	Do
75 5	Machines—Apple Paring. 750 # dor Machines—Boring, Snell s. dis 25 s Mus. Coffee—Box and Side, Common. dis 25 s	Po Sin Str
*	Box Union and Eagle. dis 201 Cut Nails, "Harrisburg," ltd. \$31 Horse, Ausable	Fo
10 4	50 27 25 24 25 220 10 Pointed & Pollshed	F
00	Paint—White Lead. U.S. Gov t	Ax
st	Screws—"American Screw Co"— Fiat Head, Iron. dis 52/4 Fiat Head Reass. dis 52/4	S
50 50 50	Sieves-Wood, Hoop iron	Ca
et	Skutes and Straps	Ne
et et	S. & Co., Kitchen	Ki Wa
et	G. S. Hall, Etton & Co	W
MMM	Stove Polish Gentlem W gross, \$455 Dixon's 60 Palace Polish Poss, \$50; bulk, per b., %	W
% (9)	Tacks—Haif Weight Am. Iron. dis 5&10; Tea Trays	W:
50	Tools—Tinmens*	Do
1	Parallel, Buffaio	Co To Ne To
10	Cast Iron Hollow dis 46: Wire—Brasa and Copper list ne Wire—Beasmeer Steel dis 13:	W
23 21	Tools	no Q -
10 28	12x12,	0
@	Pig Tin Strate	000
***	Sheet Zinc-	
*	Sheets Metal 990 Babbit Metal 9 115	0
9	Coppered. dis 45 Tinned. (Nos. 20 21 22 /	A A
M M M	Copper—Sheathing 14 @ 18 oz	N
MMMM	Bottoms	c C
N. N. N.	Coppered dis s3 Tinned Broom, Nos. 20 21 22 dis 5.	0
18	24 W. D. Wood & Co., Smooth Finish	5
* * * *	Gen. Russia, No. 1 stained. 126 Gen. Russia, No. 1 stained. 1276 Clean 1346 Galvanized dis 8336	C
-	DETROIT.	
****	(Reported by Mussis, Javett & Root,)	
* 4.4.4	Fin Plate Best Grades. 1C, 10x14, 12x12, 14x20	Hi S th
es	Tin Plate Best Grades	5 W
s et	DC, 125x17. 77 DX, 125x17. 102 DXX, 125x17. 102	5 7
et et	DXXX, 12 x17	5
1 %	1X, " 14x29	0
5 % 5 % 5 %	Pig Tin—Straits. Large Pigs	6 Pa
000	iC *** 00x8* 16** IX *** 20x8* 21** Pig Tin-straits 22 Small Pigs 22 Small Pigs 22 Solder-Pure Refined 39 Solder-Pure Refined 30 No. 1 14 No. 2 14 Copper	6 Sp
07 00 150 150 100	Copper	
00 00	Bottoms 836	6

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black latchetes, Hammer Strais, Rub Irons, Stay Chain
lots of Si seas. Single Tree Hooks, and Pole Caps, in
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Wagon Box Staples, 1½ to 2½ in, to clinch. 1000 si075 net

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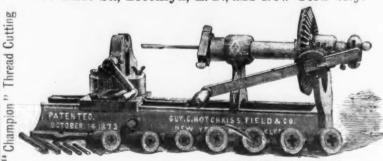


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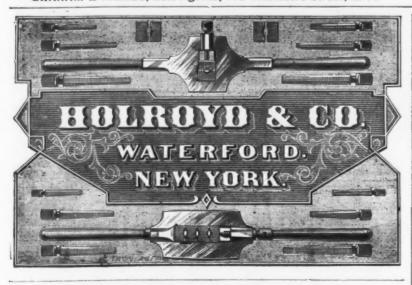
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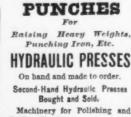
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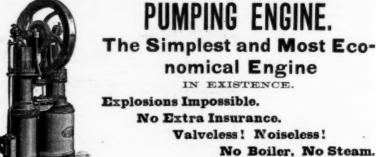
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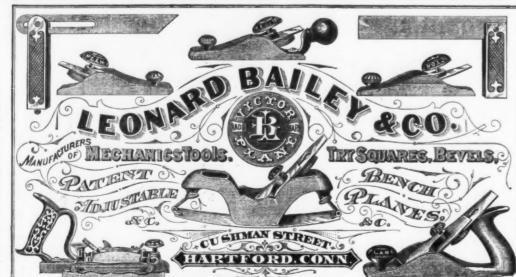


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Planished	GE 39	
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Bottoms	@ 33	(
Bar	@ 32	-
BlockTinPig	(a 23	-
Bars	60 25	-
LeadPig	60 73	40
Bar	G WI	140
SolderS. & Co	Git 18	-
A1	Gt 15	-
Market WireBundles	dia 40	10
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Less Sheet Iren.—"B," No. 27 Smooth, "S L U," No. 27	4-1	0
Smooth, "S.L. U." No. 27	E-1	Ch.
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Rusela		16
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I	Wrought Narrow Buttareduced, dis 30 %
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Churns.—Julian, No. 2, \$7:00; No. 3, \$7:50; No. 4, \$8:50.
Cider Mills.
American Sentor, \$200: Am Junior, \$18:0ne Corn Brill,—Campbell's Patenteach \$ Corn K nives.—Dunn K'ge T'of Co.'s Clip# aoz 5 00 Seymour Mfg. Co.'s Solid Steel Back
Power Shellers dis 10 % Hand Shellers bpecial rates
Cotton Gins.— Carver, with it in. Saws, \$9'15 a Saw
12 in. Saws, \$4'0' a Saw. net Crow Bars, Steel Pointed 5 5% t Drag Saw Machines. 5 5%
Culver's bon Diag Saw
Funning Mills.—Neah & Cutts
Bastard 5:00 & curren :v-
Forges.—Keystone Portable Forge Co.'sdis 12' &
Auturn Mfg. Co.'s Hav and Manure Forks dis & \$

Garden Seed Dillis and Wheel Hoes.
Allen's Double Wheel Hoe. Grinding in His-Challenge reed Milis dis 10 s
Sedgebeer's Nonpareli Milis dis 15 s
Bracord French Burr Milis dis 15 s
Bracord French Burr Milis dis 16 s
Bracord French Burr Milis dis 25 s
No. 2 Fork, Hoe and take dis 25 s
No. 2 Fork, Hoe and take dis 25 s
No. 2 Fork, Hoe and take dis 25 s
Harrow Teetha-1 luch iron dis 25 s
Dederice's Ratiroad dis 25 d
Harrow Revers dis 25 s
Harrow R Grinding Mille.

Hose. Boston Belting Co.'s Rubber Medium Sizes, dia 30&10 ≴ Small Sizes, Hy-dia 40 ≴

ASA.

See June 1982.

Wood frames, and latend that shall, in quality

wood frames, and latend that shall, in quality

AST Contraction of the state of Malasabie and Gray Front German (1982).

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Unadger Place, Charlestown, Mass.

First Son, Ma

GOLD MEDAL

PATENTED JULY 25, 1871. RE-ISSUED MAY 13, 1873, and JUNE 9, 1874.

In this Strap the liability of the leather to stretch and become loose and porous is prevented by the use of a patented non-extensible base, which supports the scatter and secures

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We make this style with single rod, double rod, and wood frames, and intend that it shall, in quality the pare favorably with our other well known brands.

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THE JUDSON

the Governois without cost, unless satisfactory to the customer, and then charge High Prices for Joing what any good Governor will do. Various Governors inferior to the "Judson" are sold in this way, operating well enough for three months, to insure collection of the pay, but becoming uscless after a year's wear—their construction lacking durability. The Judson Governor is guaranteed to be not only the best Regulator of Steam Engines, but also the most durable Governor made. Parties in buying other Governors should stipulate that their durability be guaranteed, and should also take care that they do not, for much inferior Governors, pay higher prices than those shown in the accompanying list. We guarantee the Judson Governor will do all any other Governor will do all any other Governor and o, and in Accuracy and Durability—the main essentials—we guarantee it shall do more.

Reduced Price List,

JANUARY 25th, 1876. For dimensions of Governor, see Illustrated Price List.

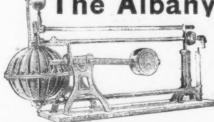


	Size, Inch.	Plain	Brigh Fin-	Extra for Level	Stop
	36	\$17.00	\$19.00	\$1.90	
	174	21.00	94:00	2:00	\$5.00
_	11/4	25.00 25.00	88.00	5.50	8:00
	136	35 00 42 00	40.00	2·75 8 25	14.00
•	2%	45 00	51:00	3.20	15.00
	3%	49:00 55:00	56:00 63:00	8.75	17:00 20:00
	336	64:00 74:00	78:00	4 · 50 5 · 00	25:00
	436	86 · 00 94 · 00	97:00	6.00	36.00
	836	119.00	125 00	6.50	48:00
	0	125.00	138.00	7 00	54.00

No Charge for Boxing & Cartage.

JUNIUS JUDSON & SON, Rochester, N. Y.

The Albany Steam Trap.



condensation from *Heating Coils*, and returns the same to the Boi.er whether the Coils are above or below the water level in Boiler, thus doing away with pumps and other mechanical devices for such purposes. Apply to

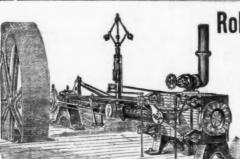
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Of recently Improved Construction. Pony Trip Hammers, Blacksmiths' Sheaves, Broaching and Stamping Presses, Iron Shop Cranes, Machinists' Tools, Gun and Sewing Machine Machinery. Make to order Gray and Charcoal Iron Castings of all styles and sizes not exceeding 15 tons weight, (making patterns if desired). Furnish Clamp Pulleys of light patterns, cut gears in a superior



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C. SCOFIELD'S STRAIGHTENER OR BENDER

For Shafting, Axles, Tubes, Rails, &c.

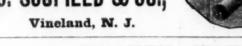
has long been a want of some device by which the straightening of shafting could be out removing the work from the centers, and at the same time do it quickly and ac-

SCOFIELD PATENT SHAFT STRAIGHTENER

meets just such a want; the apparatus is light and can be easily handled, yet it is of sufficient strength for the purpose required. It can be placed upon the shears of the lathe, and moved along the entire length of the work. It is especially Adapted to Removing Short Bends, which frequently occur in long lengths of shafting. The lightness of the Straightener renders it emmently Adapted for Line and Counter-Shafting, orthout necessitating the time and trouble of removing hangers and detaching couplings, but can be

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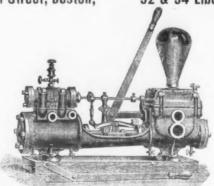
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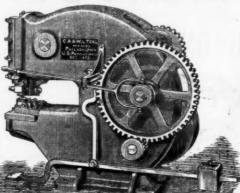
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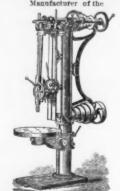
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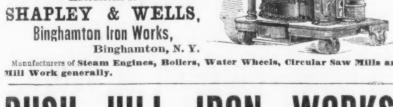
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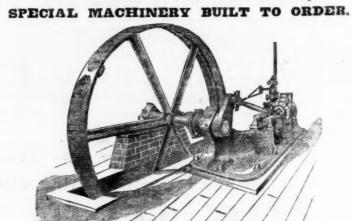
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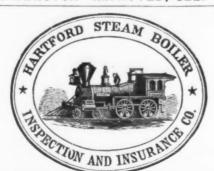
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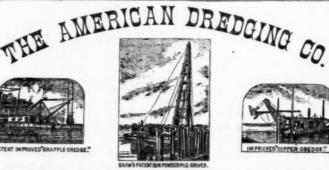
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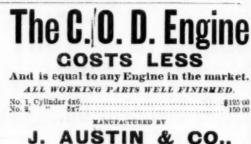
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Your committee would inhesitatingly recommend for this exhibition the "Medal of Progress," but find such award debarred by the rule of the Institute, forbidding such awarded We, therefore, respectfully recommend the award of a Silver Medal.

Silver Medal Awarded.

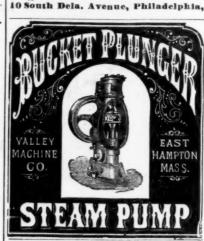
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